

Qazi 09/532,687

=&gt; FIL HCAPLUS

FILE 'HCAPLUS' ENTERED AT 12:30:56 ON 18 DEC 2003  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

CT: controlled terms

PFT: preferred terms,  
old terms, synonyms

NT: narrower terms

FT: free text

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 18 Dec 2003 VOL 139 ISS 25  
 FILE LAST UPDATED: 17 Dec 2003 (20031217/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

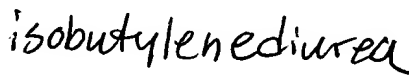
=&gt; d que 1107

L6	560	SEA FILE=HCAPLUS ABB=ON	PLU=ON	FERTILIZERS (L) AMMONIUM NITRATE+PFT,NT/CT
L7	1763	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) AMMONIUM NITRATE"+PFT,NT/CT
L8	457	SEA FILE=HCAPLUS ABB=ON	PLU=ON	FERTILIZERS (L) AMMONIA+PFT,NT /CT
L9	254	SEA FILE=HCAPLUS ABB=ON	PLU=ON	FERTILIZERS (L) AMMONIUM+PFT,N T/CT
L10	1763	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) AMMONIUM NITRATE"+PFT,NT/CT
L11	127	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) AMMONIUM NITRATE-UREA"+PFT,NT/CT
L12	880	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) AMMONIUM PHOSPHATE"+PFT,NT/CT
L13	252	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) AMMONIUM POLYPHOSPHATE"+PFT,NT/CT
L14	1156	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) AMMONIUM SULFATE"+PFT,NT/CT
L15	6	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) AMMONIUM-NITR OGEN-PHOSPHORUS-POTASSIUM"+PFT,NT/CT
L16	3613	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) NITRATE"+PFT, NT/CT
L17	30	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) NITROCHALK"+P FT,NT/CT
L18	13816	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) NITROGEN"+PFT ,NT/CT
L19	269	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) NITROGEN, SLOW-RELEASE"+PFT,NT/CT
L20	2814	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) NITROGEN-PHOS PHORUS"+PFT,NT/CT
L21	2069	SEA FILE=HCAPLUS ABB=ON	PLU=ON	"FERTILIZERS (L) NITROGEN-PHOS PHORUS-POTASSIUM"+PFT,NT/CT

CT for  
nitrogen-  
containing  
fertilizer

Qazi 09/532,687

limit by  
publication yr.  $\leq 2001$



Page 2

Qazi 09/532,687

NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

L61 5 SEA FILE=REGISTRY FAM FUL L60 *full family search*  
L62 263 SEA FILE=HCAPLUS ABB=ON PLU=ON L61 *references in HCAPLUS*  
L64 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L62 AND L37 *cmpd + FT for surfactant*  
L65 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L61 AND (IRON OR FE OR FERROUS OR FERRIC)  
L66 26 SEA FILE=HCAPLUS ABB=ON PLU=ON L61 AND (SULFATE OR SULFITE OR SULFUR?) *cmpd + FT for iron sulfate*  
L67 28 SEA FILE=HCAPLUS ABB=ON PLU=ON L65 OR L66  
L68 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L67 AND ?ACETIC? *FT acetic*  
L69 29 SEA FILE=HCAPLUS ABB=ON PLU=ON (L64 OR L65 OR L66 OR L67 OR L68)  
L71 13 SEA FILE=HCAPLUS ABB=ON PLU=ON L47 NOT (L56 OR L69)  
L72 14 SEA FILE=HCAPLUS ABB=ON PLU=ON L56 NOT (L47 OR L69)  
L73 29 SEA FILE=HCAPLUS ABB=ON PLU=ON L69 NOT (L47 OR L56)  
L107 56 SEA FILE=HCAPLUS ABB=ON PLU=ON L71 OR L72 OR L73 *combine all cites*

=> FIL AGRICOLA

FILE 'AGRICOLA' ENTERED AT 12:31:25 ON 18 DEC 2003

FILE COVERS 1970 TO 15 Dec 2003 (20031215/ED)

Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted material. All rights reserved. (2003)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que 191

L78 4741 SEA FILE=AGRICOLA ABB=ON PLU=ON SURFACTANTS+PFT,NT/CT  
L79 67 SEA FILE=AGRICOLA ABB=ON PLU=ON WETTERS+PFT/CT  
L80 14615 SEA FILE=AGRICOLA ABB=ON PLU=ON "NITROGEN FERTILIZERS"+PFT,NT/CT  
L81 445 SEA FILE=AGRICOLA ABB=ON PLU=ON "NITROGEN-PHOSPHORUS FERTILIZERS"+PFT,NT/CT  
L82 423 SEA FILE=AGRICOLA ABB=ON PLU=ON "NITROGEN-POTASSIUM FERTILIZERS"+PFT,NT/CT  
L83 14687 SEA FILE=AGRICOLA ABB=ON PLU=ON (L80 OR L81 OR L82)  
L84 98 SEA FILE=AGRICOLA ABB=ON PLU=ON L83 AND (L78 OR L79)  
L86 33 SEA FILE=AGRICOLA ABB=ON PLU=ON L84 AND (?SULFAT? OR ?SULFIT? OR ?SULFURIC OR ?SULFUROUS)  
L91 11 SEA L86 AND (HERBICID? OR ALGICID?) *FT herbicide, algicide*

*CT for surfactants, nitrogen fertilizers*

*FT sulfate*

=> FIL CROPU

FILE 'CROPU' ENTERED AT 12:31:52 ON 18 DEC 2003  
COPYRIGHT (C) 2003 THOMSON DERWENT

FILE LAST UPDATED: 26 NOV 2003 <20031126/UP>  
>>> CROPU WILL NO LONGER BE UPDATED AS OF 2004 <<<

>>> EFFECTIVE JAN 1, 2004, THE 70% DISCOUNT FOR  
DERWENT CROP PROTECTION SUBSCRIBERS WILL BE NO  
LONGER VALID <<<

=> d que 1105

L97 4556 SEA FILE=CROPU ABB=ON PLU=ON FERTILIZER (L) (?NITR? OR  
?AMMON? OR ?AMMIN? OR ?UREA? OR ?URIC)  
L98 2076 SEA FILE=CROPU ABB=ON PLU=ON L97 AND (SURFACTANT? OR SURFACE  
OR WETT?)  
L99 1161 SEA FILE=CROPU ABB=ON PLU=ON L98 AND (SULFATE OR SULFIC OR  
SULFURIC OR SULFUROUS)  
L100 45 SEA FILE=CROPU ABB=ON PLU=ON L98 AND (IRON OR FE OR FERRIC  
OR FERROUS)  
L102 32 SEA FILE=CROPU ABB=ON PLU=ON L100 AND L99  
L103 24 SEA FILE=CROPU ABB=ON PLU=ON L102 AND PY<2001  
L105 3 SEA FILE=CROPU ABB=ON PLU=ON L103 AND (MOSS? OR LAWN? OR  
GOLF OR PUTTING OR GREEN)

FT: nitrogen  
fertilizer,  
surfactant,  
iron sulfate,  
limit  
PY<2001

→ FT: moss, lawn,  
golf, putting  
green

=> FIL HCAPLUS

FILE 'HCAPLUS' ENTERED AT 12:32:20 ON 18 DEC 2003  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is  
held by the publishers listed in the PUBLISHER (PB) field (available  
for records published or updated in Chemical Abstracts after December  
26, 1996), unless otherwise indicated in the original publications.  
The CA Lexicon is the copyrighted intellectual property of the  
the American Chemical Society and is provided to assist you in searching  
databases on STN. Any dissemination, distribution, copying, or storing  
of this information, without the prior written consent of CAS, is  
strictly prohibited.

FILE COVERS 1907 - 18 Dec 2003 VOL 139 ISS 25  
FILE LAST UPDATED: 17 Dec 2003 (20031217/ED)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> d 1107 ibib hitind abs 1-56

L107 ANSWER 1 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 2002:927809 HCAPLUS  
DOCUMENT NUMBER: 138:4147  
TITLE: Solid-chemical compositions, geochemical binder  
system, and improved high-shear granulation process  
for both conventional and slow-release fertilizer and  
bioremediation nutrient compositions  
INVENTOR(S): Hince, Eric Christian  
PATENT ASSIGNEE(S): USA  
SOURCE: U.S. Pat. Appl. Publ., 14 pp.  
CODEN: USXXCO

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	US 2002178772	A1	20021205	US 2001-873576	20010604
PRIORITY APPLN. INFO.:				US 2001-873576	20010604
IC	ICM C05D001-00				
NCL	071031000				
CC	19-6 (Fertilizers, Soils, and Plant Nutrition)				
IT	Carbonates, uses Phosphates, uses <b>Sulfates, uses</b>				
RL:	MOA (Modifier or additive use); USES (Uses) (low-solubility; binders in environmentally-friendly solid fertilizer composition)				
IT	471-34-1, Calcium carbonate, uses 546-93-0, Magnesium carbonate 563-71-3, <b>Iron(II)</b> carbonate 598-62-9, Manganese(II) carbonate 1302-91-6, Alunite 7487-88-9, Magnesium <b>sulfate</b> , uses 7778-18-9, Calcium <b>sulfate</b> 12207-14-6, Jarosite 13397-24-5, Gypsum, uses 13462-86-7, Barite 14476-12-1, Rhodochrosite 14476-16-5, Siderite 14798-04-0, Anhydrite 16389-88-1, Dolomite, uses RL: MOA (Modifier or additive use); USES (Uses) (binder in environmentally-friendly solid fertilizer composition)				
IT	57-13-6, Urea, biological studies 60-00-4, EDTA, biological studies 68-04-2, Sodium Citrate 77-92-9, Citric acid, biological studies 139-13-9, <b>Nitrilotriacetic</b> acid 866-84-2, Potassium citrate 1303-96-4, Borax 1314-13-2, Zinc oxide, biological studies 1330-43-4, Sodium tetraborate <b>6104-30-9</b> , Isobutylidene diurea 6484-52-2, Ammonium nitrate, biological studies 7320-34-5, Potassium pyrophosphate 7439-89-6, <b>Iron</b> , biological studies 7439-95-4, Magnesium, biological studies 7439-96-5, Manganese, biological studies 7439-98-7, Molybdenum, biological studies 7440-42-8, Boron, biological studies 7440-50-8, Copper, biological studies 7440-66-6, Zinc, biological studies 7440-70-2, Calcium, biological studies 7447-39-4, Copper(II) chloride, biological studies 7447-40-7, Potassium chloride, biological studies 7558-79-4, Disodium phosphate 7558-80-7, Monosodium phosphate 7631-95-0, Sodium molybdate 7631-99-4, Sodium nitrate, biological studies 7704-34-9, <b>Sulfur</b> , biological studies 7720-78-7, <b>Iron(II) sulfate</b> 7722-76-1, Monoammonium phosphate 7722-88-5, Sodium pyrophosphate 7733-02-0, Zinc <b>sulfate</b> 7757-79-1, Potassium nitrate, biological studies 7758-29-4, Sodium tripolyphosphate 7758-98-7, Copper(II) <b>sulfate</b> , biological studies 7778-53-2, Potassium phosphate 7778-80-5, Potassium <b>sulfate</b> , biological studies 7783-18-8, Ammonium thiosulfate 7783-20-2, Ammonium <b>sulfate</b> , biological studies 7783-28-0, Diammonium phosphate 7785-87-7, Manganese(II) <b>sulfate</b> 9611-05-6, Urea formaldehyde condensate 10043-35-3, Boric acid, biological studies 10043-52-4, Calcium chloride, biological studies 12007-92-0, Sodium pentaborate 12027-67-7, Ammonium molybdate 13845-36-8, Potassium tripolyphosphate 15978-77-5, Urea ammonium nitrate RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses) (environmentally-friendly solid fertilizer composition containing)				
AB	This invention discloses means for the formulation and preparation of solid-chemical compns. which provide sources of water-soluble nutrients, electron acceptors and other agents for agriculture and waste-treatment,				

in particular, the bioremediation of contaminated environmental media. The disclosed formulations and means of production of the slow-release solid-chemical compns. utilize a novel and economical biphasic chemical-system technol. which involves a combination of a first nutrient component, which comprises water-soluble nutrients and other biol. utilizable substances, with a second component, which comprises an inorg. geochem.-binder system. The simplest embodiment of the geochem.-binder system comprises one or more salts of phosphoric acid. In the preferred embodiments intended for the slow-release of the ingredients contained in the nutrient component, the geochem.-binder system of the second component comprises a combination of one or more salts of phosphoric acid with a inorg. binder matrix preferably containing a mixture of low-solubility carbonates, carbonate minerals,

phosphates and phosphate minerals. The different embodiments of the geochem.-binder system of this invention allows a wide variation of formulations of the nutrient component to be prepared in both conventional and slow-release forms, using an improved high-shear granulation process whereby the dangerous chems. typically used in the granulation process are largely or completely replaced with water. The invention discloses means by which such compns. can be economically prepared in large quantities so as to meet the specific needs of different sectors of the agricultural/agribusiness and phytoremediation/bioremediation markets. The disclosed solid-chemical compns. of the present invention provide improved, cost-effective means for slowing and controlling the release-rate profiles of water-soluble nutrients, such as nitrogen- and phosphorus-rich compds., and improved means for enhanced and/or time-targeted nutrient uptake by plants and microorganisms. The invention also provides improved means for the reduction of nutrient run-off from agricultural areas into surface waters and means of preventing or minimizing nutrient-contamination of ground-water aquifers.

L107 ANSWER 2 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2002:90441 HCAPLUS

DOCUMENT NUMBER: 136:134259

TITLE: Method for producing homogeneous fertilizer granules and fertilizer compositions containing slow-release nitrogen and other nutrient sources

INVENTOR(S): Neyman, Gary B.; Derr, Elmer A.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 6 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002011087	A1	20020131	US 1998-122587	19980724
US 6464746	B2	20021015		
PRIORITY APPLN. INFO.:			US 1998-122587	19980724
IC ICM C05B001-00				
NCL 071029000				
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)				
Section cross-reference(s): 48				
IT 7439-89-6, Iron, biological studies				
RL: AGR (Agricultural use); PEP (Physical, engineering or chemical process); PYP (Physical process); BIOL (Biological study); PROC (Process);				

## USES (Uses)

(frits; method for producing homogeneous fertilizer granules and fertilizer compns. containing slow-release nitrogen and other nutrient sources)

IT 57-13-6, Urea, biological studies 1309-48-4, Magnesium oxide (MgO), biological studies 1344-43-0, Manganese oxide (MnO), biological studies **6104-30-9**, Isobutylidene diurea 7722-76-1, Monoammonium phosphate 7778-80-5, Potassium **sulfate**, biological studies 7783-20-2, Ammonium **sulfate**, biological studies 7785-87-7, Manganese **sulfate** (MnSO<sub>4</sub>) 12174-11-7, Attaclay 393138-21-1, Meth-Ex 40  
 RL: AGR (Agricultural use); PEP (Physical, engineering or chemical process); PYP (Physical process); BIOL (Biological study); PROC (Process);  
 USES (Uses)

(method for producing homogeneous fertilizer granules and fertilizer compns. containing slow-release nitrogen and other nutrient sources)

AB Homogeneous fertilizer granules that deliver high doses of slow-release nitrogen in pellets that disperse or fall apart when contacted by moisture are prepared by includes mixing particles of slow-release nitrogen with particles of a potassium source and particles of a phosphorus source, to make a homogeneous blend of the particles. Then, the blended particles are moistened with water or an aqueous solution of urea, and after moistening, the blended particles are contacted with an aqueous suspension of urea-formaldehyde resin to bind the particles into homogeneous granules. The aqueous suspension of urea formaldehyde resin preferably has a urea:formaldehyde ratio of about 1:1. Thus, a batch of 10-18-18 fertilizer was prepared according to the following formula (wts. of components given per ton): 75 lb Meth-Ex 40, 115 lb isobutylidene diurea, 720 lb monoammonium phosphate, 675 lb **sulfate** of potash (SOP), 50 lb SOP-magnesia, 30 lb magnesium oxide, 12 lb manganese oxide, 12 lb manganese **sulfate**, 35 lb **iron** frit, 100 lb attaclay, and 25 lb urea-formaldehyde resin. The product obtained comprised homogeneous granules with an abrasion index of 10% and a dispersion index of 99%.

L107 ANSWER 3 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2001:1168 HCAPLUS  
 DOCUMENT NUMBER: 134:41726  
 TITLE: Controlled-release pesticide and fertilizer briquettes  
 INVENTOR(S): Moore, William Percy, Jr.  
 PATENT ASSIGNEE(S): Lesco, Inc., USA  
 SOURCE: Eur. Pat. Appl., 9 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1063215	A2	20001227	EP 2000-303118	20000413
EP 1063215	A3	20020925		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6225258	B1	20010501	US 1999-344083	19990625
SE 2000001520	A	20001226	SE 2000-1520	20000427
FI 2000001363	A	20001226	FI 2000-1363	20000607
NO 2000003322	A	20001227	NO 2000-3322	20000623

Qazi 09/532,687

JP 2001048705 A2 20010220 JP 2000-189238 20000623  
PRIORITY APPLN. INFO.: US 1999-344083 A 19990625

IC ICM C05G003-02

ICS C05C009-02; C05D009-02; C05F011-00

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

Section cross-reference(s): 5

IT Humic acids

RL: MOA (Modifier or additive use); USES (Uses)

(iron salts; sorbent in controlled-release pesticide and fertilizer briquettes)

IT 471-46-5, Oxamide **6104-30-9**, Isobutylidene diurea 7704-34-9, Sulfur, biological studies 7785-21-9, Magnesium ammonium phosphate 9011-05-6, Urea-formaldehyde condensate 13718-30-4, Magnesium potassium phosphate 28100-23-4, Crotylidene diurea  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(controlled-release pesticide and fertilizer briquettes containing)

AB An attrition- and shatter-resistant plant nutrient/pesticide briquette composition which slowly releases the nutrients and of biol. active materials over long periods of time, comprises slow-release plant nutrient particles, pesticide sorption particles, liquid systemic pesticide sorbed on the pesticide sorption particles to reduce pesticide leachability, and an adhesive coating the slow-release plant nutrient and pesticide sorption particles. The composition is formed into briquettes by pressing into dies at elevated pressures and temps. A six-step method is provided for the preparation of the slow-releasing briquettes from slow release fertilizers, such as magnesium ammonium phosphate; pesticide sorption particles, such as activated carbon; liquid systemic pesticides emulsions, such as imidachloprid; and adhesives, such as a vinylidene chloride, 2-ethylhexyl acrylate and acrylic acid resin emulsion.

L107 ANSWER 4 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2000:608520 HCAPLUS

DOCUMENT NUMBER: 133:173398

TITLE: Quaternary ammonium glycoside surfactant as an adjuvant for herbicide and fertilizer formulations

INVENTOR(S): Gustavsson, Bodil

PATENT ASSIGNEE(S): Akzo Nobel NV, Neth.

SOURCE: PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000049870	A1	20000831	WO 2000-SE261	20000210 <--
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
SE 9900638	A	20000825	SE 1999-638	19990224 <--
SE 514862	C2	20010507		



Qazi 09/532,687

CA 2356842 AA 20000831 CA 2000-2356842 20000210 <--  
BR 2000008217 A 20011106 BR 2000-8217 20000210  
EP 1154687 A1 20011121 EP 2000-911526 20000210  
EP 1154687 B1 20031119

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO

AU 756823 B2 20030123 AU 2000-33392 20000210  
PRIORITY APPLN. INFO.: SE 1999-638 A 19990224  
WO 2000-SE261 W 20000210

OTHER SOURCE(S): MARPAT 133:173398

IC ICM A01N025-30

ICS A01N057-20; C05G003-06

CC 5-3 (Agrochemical Bioregulators)

Section cross-reference(s): 19

IT Agrochemical formulations  
Herbicides

**Surfactants**

(quaternary ammonium glycoside surfactant as an adjuvant for herbicide  
and fertilizer formulations)

IT **Fertilizers**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(quaternary ammonium glycoside surfactant as an adjuvant for  
herbicide and fertilizer formulations)

IT 7783-20-2, Ammonium **sulfate**, biological studies 38641-94-0,  
Roundup

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(quaternary ammonium glycoside surfactant as an adjuvant for herbicide  
and fertilizer formulations)

AB The invention relates to the use of a quaternary ammonium glycoside  
surfactant as an adjuvant for fertilizers or pesticides, such as  
herbicides. The surfactant contains at least one hydrocarbon group with  
6-24 carbon atoms and at least one quaternary ammonium group, where at  
least one substituent is an alkyleneoxy group, which is connected to a  
saccharide residue by a glycosidic bond. These quaternary ammonium  
glycoside surfactants have improved biodegradability. They also improve  
the uptake and efficacy of fertilizers and herbicides.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L107 ANSWER 5 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2000:433258 HCAPLUS

DOCUMENT NUMBER: 133:58233

TITLE: Vacuum-coated particulate sustained-release  
fertilizers

INVENTOR(S): Moore, William P.

PATENT ASSIGNEE(S): Agri-Nutrients Technology Group, Inc., USA

SOURCE: U.S., 8 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6080221	A	20000627	US 1999-398515	19990917
WO 2001019756	A1	20010322	WO 2000-US25256	20000914

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,

CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,  
 HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,  
 LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,  
 SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,  
 ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,  
 CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-398515 A 19990917

IC ICM C05G003-02

ICS C05G005-00

NCL 071011000

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

IT 57-13-6, Urea, biological studies 471-46-5, Oxamide **6104-30-9**,  
 Isobutylidenediurea 7447-40-7, Potassium chloride, biological studies  
 7757-79-1, Potassium nitrate, biological studies 7778-80-5, Potassium  
**sulfate**, biological studies 7783-20-2, Ammonium **sulfate**  
 , biological studies 7785-21-9, Magnesium ammonium phosphate  
 9011-05-6, Ureaform 10124-31-9, Ammonium phosphate 13718-30-4,  
 Magnesium potassium phosphate 275819-52-8

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (vacuum-coated particulate fertilizer)

IT 7704-34-9, **Sulfur**, biological studies 7779-90-0, Zinc  
 phosphate 10043-83-1, Magnesium phosphate 10103-46-5, Calcium  
 phosphate

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (vacuum-coating particulate fertilizer coated with)

AB A method of coating fertilizer particles exhibiting porous surfaces under  
 vacuum to form attrition-resistant controlled-release particulate  
 fertilizers, is carried out by drawing a vacuum on the fertilizer  
 particles and applying thereto a water-insol. fluid resin at about atmospheric  
 pressure, so that the fluid resin is forced into the porous surfaces of  
 the fertilizer particles by differences in pressure, and then hardening  
 the fluid resin to form a solid resin, tenaciously bonded onto, and into,  
 the porous surfaces of the fertilizer particles. Thus, porous water-soluble,  
**sulfur**-coated urea fertilizer was vacuum-coated with polyethylene.  
 Granular, briquetted, compacted and other special shaped fertilizers may  
 also be effectively vacuum-coated to provide controlled release products.  
 Pesticides may also be included in these attrition resistant products.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L107 ANSWER 6 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2000:300746 HCAPLUS

DOCUMENT NUMBER: 132:321488

TITLE: Coated granular fertilizers for rice paddy and their  
 manufacture

INVENTOR(S): Komoritani, Haruhiko; Sakata, Naokatsu; Otani, Mikio;  
 Sueta, Hideaki

PATENT ASSIGNEE(S): Central Glass Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
------------	------	------	-----------------	------

JP 2000128684	A2	20000509	JP 1998-297403	19981019 <--
PRIORITY APPLN. INFO.:			JP 1998-297403	19981019

IC ICM C05G003-00

ICS C05G003-00; C05G005-00

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

IT Rice (Oryza sativa)

**Surfactants**

(manufacture of granular fertilizers for rice paddy, having polyurethane film containing highly water-absorbing polymer particles, to which diatomite or amorphous SiO<sub>2</sub> micropowder is adhered)

IT **Fertilizers**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(**urea**; manufacture of granular fertilizers for rice paddy, having polyurethane film containing highly water-absorbing polymer particles, to which diatomite or amorphous SiO<sub>2</sub> micropowder is adhered)

IT 151-21-3, Sodium dodecyl **sulfate**, biological studies

7631-86-9, Carplex 67, biological studies 9086-70-8, Sanwet ST 500MPS

25155-30-0

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(manufacture of granular fertilizers for rice paddy, having polyurethane film containing highly water-absorbing polymer particles, to which diatomite or amorphous SiO<sub>2</sub> micropowder is adhered)

AB The coated fertilizers with increased hydrophilicity have  $\geq 1$  film comprising urethane polymers and optionally 1-200  $\mu\text{m}$ -diameter highly water-absorbing polymer particles and the outermost layer contains diatomaceous earth or amorphous SiO<sub>2</sub> micropowder with equilibrium moisture 5-20% and surfactants. The coated fertilizers are manufactured by adhering diatomaceous earth or the amorphous SiO<sub>2</sub> micropowder and optionally surfactants to the uppermost layer before the layer is completely cured and loses stickiness, and then curing upon heating. The fertilizers are prevented from floating on water surface when applied to paddy. A dispersion of ST 500MPS (highly water-absorbing crosslinked acrylic polymer) in castor oil, isocyanate-terminated prepolymer prepared from MDI and castor oil, and ethylenediamine propylene oxide adduct were sprayed over urea fertilizer granules over 1 h. The granules was further treated with Carplex 67 (amorphous SiO<sub>2</sub> micropowder) after 10 min, sprayed with an aqueous solution of Na dodecyl **sulfate**, and then rolled at 70° for 2 h to give coated fertilizers.

L107 ANSWER 7 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1998:786002 HCAPLUS

DOCUMENT NUMBER: 130:81007

TITLE: Artificial aqueous media containing water-absorbing polymers and surfactants for planting

INVENTOR(S): Kamei, Masatoshi; Okano, Tetsuya; Suzuki, Tadayuki

PATENT ASSIGNEE(S): Kao Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10323121	A2	19981208	JP 1997-133130	19970523 <--
PRIORITY APPLN. INFO.:			JP 1997-133130	19970523

IC ICM A01G001-00  
ICS C05G003-04  
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)  
Section cross-reference(s): 5, 38  
IT Cut flower preservation  
Hydroponics  
Soil amendments  
Soil substitutes  
**Surfactants**  
(artificial aqueous media containing water-absorbing polymers and  
surfactants  
for planting)  
IT **Surfactants**  
(cationic; artificial aqueous media containing water-absorbing polymers and  
surfactants for planting)  
IT **Fertilizers**  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(~~nitrogen-phosphorus-potassium~~;  
artificial aqueous media containing water-absorbing polymers and surfactants  
for planting)  
IT **Surfactants**  
(nonionic; artificial aqueous media containing water-absorbing polymers and  
surfactants for planting)  
IT Sulfonic acids, biological studies  
Sulfonic acids, biological studies  
RL: AGR (Agricultural use); POF (Polymer in formulation); BIOL (Biological  
study); USES (Uses)  
(polymers, **salts**; artificial aqueous media containing water-absorbing  
polymers and surfactants for planting)  
IT Polymers, biological studies  
Polymers, biological studies  
RL: AGR (Agricultural use); POF (Polymer in formulation); BIOL (Biological  
study); USES (Uses)  
(sulfo-containing, **salts**; artificial aqueous media containing  
water-absorbing polymers and surfactants for planting)  
IT 108-05-4D, Vinyl acetate, polymers with maleic acid **salts**  
110-16-7D, Maleic acid, **salts**, polymers  
RL: AGR (Agricultural use); POF (Polymer in formulation); BIOL (Biological  
study); USES (Uses)  
(Aquareserve; artificial aqueous media containing water-absorbing polymers  
and  
surfactants for planting)  
IT 79-06-1D, Acrylamide, polymers 79-10-7D, Acrylic acid, **salts**,  
polymers 107-13-1D, Acrylonitrile, polymers 9002-89-5, Poly(vinyl  
alcohol) 9003-04-7, Poly(acrylic acid) sodium **salt**  
9004-32-4, Carboxymethyl cellulose 9005-25-8, Starch, biological studies  
9005-32-7D, Alginic acid, esters 25322-68-3D, derivs. 26426-80-2, KI  
gel 28408-65-3, Poly(N-vinylacetamide) 107709-25-1, Sanfresh ST 100  
107830-79-5D, Acrylonitrile-starch graft copolymer, saponified  
RL: AGR (Agricultural use); POF (Polymer in formulation); BIOL (Biological  
study); USES (Uses)  
(artificial aqueous media containing water-absorbing polymers and  
surfactants  
for planting)  
AB The aqueous media contain 0.01-10 weight% water-absorbing polymers and  
0.0001-20  
weight% surfactants. Artificial media comprising the aqueous media and soil,  
sand, inorg. substances, and/or supports are also claimed. Primula

polyantha planted in an aqueous medium containing 0.67 weight% crosslinked poly(acrylic acid) Na **salt** and 0.10 weight% cetyltrimethylammonium chloride (Quartamin 60W) (I) showed better growth than that planted in a control medium without I.

L107 ANSWER 8 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1998:150666 HCAPLUS

DOCUMENT NUMBER: 128:256859

TITLE: Granulation of potassium chloride in the presence of plasticizers and surfactants. Part 3. Effect of additions of urea and ammonium **sulfate**

AUTHOR(S): Kuvshinnikov, I. M.; Kondakov, D. F.; Charikova, T. A.

CORPORATE SOURCE: MGOU, Russia

SOURCE: Khimicheskaya Promyshlennost (Moscow) (1997), (9), 615-618

CODEN: KPRMAW; ISSN: 0023-110X

PUBLISHER: Izdatel'stvo Teza

DOCUMENT TYPE: Journal

LANGUAGE: Russian

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

ST potassium chloride granulation urea ammonium **sulfate**

IT Plasticizers

**Surfactants**

(potassium chloride granulation conditions with urea and ammonium **sulfate**)

IT **Fertilizers**

RL: AGR (Agricultural use); IMF (Industrial manufacture); PRP (Properties); BIOL (Biological study); PREP (Preparation); USES (Uses) (potassium chloride; potassium chloride granulation conditions with **urea and ammonium sulfate**)

IT 7447-40-7P, Potassium chloride, biological studies

RL: AGR (Agricultural use); IMF (Industrial manufacture); PRP (Properties); BIOL (Biological study); PREP (Preparation); USES (Uses) (potassium chloride granulation conditions with urea and ammonium **sulfate**)

IT 57-13-6, Urea, biological studies 7783-20-2, Ammonium **sulfate**, biological studies

RL: AGR (Agricultural use); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses) (potassium chloride granulation conditions with urea and ammonium **sulfate**)

AB Potassium chloride was granulated with urea or ammonium **sulfate** under different conditions, varying temperature, moisture and other factors for production of granules with different properties. The presence of plasticizers and surface active agents generally did not produce favorable results.

L107 ANSWER 9 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1997:556426 HCAPLUS

DOCUMENT NUMBER: 127:190088

TITLE: Turfgrass response to slow-release nitrogen fertilizers

AUTHOR(S): Carrow, Robert N.

CORPORATE SOURCE: Crop and Soil Science Dep., Georgia Exp. Stn., Univ. of Georgia, Griffin, GA, 30223-1797, USA

SOURCE: Agronomy Journal (1997), 89(3), 491-496

CODEN: AGJOAT; ISSN: 0002-1962

PUBLISHER: American Society of Agronomy

DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CC 19-5 (Fertilizers, Soils, and Plant Nutrition)  
 ST turf slow release nitrogen fertilizer; Bermuda grass polymer  
**sulfur** coated urea  
 IT Polymers, biological studies  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (nitrogen release from and Bermuda grass response to polymer-coated  
**sulfur**-coated nitrogen fertilizers)  
 IT Coating materials  
 (polymer and **sulfur** coatings for fertilizers effect on  
 nitrogen release and Bermuda grass response)  
 IT Turf  
 (polymer-coated **sulfur**-coated urea and other slow-release  
 nitrogen fertilizer sources effect on)  
 IT 7704-34-9, **Sulfur**, biological studies  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (nitrogen release from and Bermuda grass response to polymer-coated  
**sulfur**-coated nitrogen fertilizers)  
 IT 57-13-6, Urea, biological studies **6104-30-9** 9011-05-6  
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except  
 adverse); BPR (Biological process); BSU (Biological study, unclassified);  
 BIOL (Biological study); PROC (Process); USES (Uses)  
 (nitrogen release from polymer-coated urea and other slow-release  
 nitrogen fertilizer sources and effect on hybrid Bermuda grass  
 performance)  
 AB New polymer coatings have been developed and used to coat **sulfur**  
 -coated urea (SCU) and other core N materials. These polymer-coated  
 S-coated ureas (PCSCU) and polymer-coated S-coated N-P-K fertilizers  
 (PCSCF) require evaluation for their N-release properties in turfgrass  
 culture. Also, N carriers from three different classes of N sources were  
 included: polymer-coated urea (PCU), urea-formaldehyde (UF) reaction  
 products, and natural orgs. Initial and long-term N release were determined as  
 demonstrated by visual quality, total shoot growth, and number of mowings of  
 "Tifway" hybrid Bermuda grass [*Cynodon dactylon* (L.) Pers. + C.  
*transvaalensis* Burt-Davey] grown on an Appling sandy clay loam (clayey,  
 kaolinitic, thermic Typic Kanhapludults). All N carriers were compared  
 within their N class and across all carriers, using urea applied at 98 kg  
 N ha<sup>-1</sup> in early summer of 1994 and 1995 as the basis of comparison. Other  
 fertilizers were also applied at this rate and timing, except for three  
 urea-UF reaction products applied in equal, split treatments in early and  
 mid-summer. At 0 to 30 d of treatment, PCSCU and PCSCF product  
 performance varied, with 14 to 57% of visual quality ratings equal to or  
 greater than ( $\geq$ ) urea plots; at 61 to 95 d, 14 to 57% of ratings  
 were > urea ratings. Greater long-term quality response was related to  
 higher S and/or polymer content in the coating of PCSCU and PCU products,  
 but not to larger particle size for PCSCUs. For PCUs, the 0- to 30-d  
 visual quality response ranged from 14 to 43% of ratings  $\geq$  urea,  
 and at 61 to 95 d from 29 to 71% of ratings > urea. Natural orgs. and UF  
 reaction products also demonstrated wide variation within their class of  
 initial and long-term N release. Within each N class, the wide diversity  
 of N-release patterns indicates the need to evaluate each carrier, and  
 shows that placement of a specific N source within an N class provides  
 only very broad implications as to its performance.

L107 ANSWER 10 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1997:509048 HCAPLUS  
 DOCUMENT NUMBER: 127:175944

TITLE: Coated granular fertilizers having biodegradable coating films  
 INVENTOR(S): Chikami, Yoshihiro; Ashihara, Michiyuki  
 PATENT ASSIGNEE(S): Chisso Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09194281	A2	19970729	JP 1996-21847	19960112
PRIORITY APPLN. INFO.:			JP 1996-21847	19960112

IC ICM C05G003-00  
 CC 19-6 (Fertilizers, Soils, and Plant Nutrition)  
 IT 471-34-1, Calcium carbonate, biological studies 471-46-5, Oxamide  
 1332-37-2, **Iron** oxide, biological studies **6104-30-9**,  
 Isobutylidenediurea 7631-86-9, Silica, biological studies 7704-34-9,  
**Sulfur**, biological studies 14807-96-6, Talc, biological studies  
 28100-23-4, Crotylidenediurea  
 RL: AGR (Agricultural use); PEP (Physical, engineering or chemical  
 process); BIOL (Biological study); PROC (Process); USES (Uses)  
 (filler; biodegradable polymer-coated granular fertilizers with  
 controlled dissoln. rate)  
 AB The granular fertilizers are coated with resin films containing  $\geq 1$  of  
 biodegradable polyesters and  $\geq 1$  of polyolefins, olefin copolymers,  
 poly(vinylidene chloride), or vinylidene chloride copolymers and  
 overcoated with resin films containing the polyesters. The fertilizers have  
 coating films that possess high strength during manufacturing, storage, and  
 transportation and controlled dissoln. rate at the time of use.  
 Fertilizers were coated with a composition containing poly(3-hydroxy-3-  
 methylpropionic acid) (I) 40, ethylene-carbon monoxide copolymer 10, and  
 talc 50 weight% to coating ratio 6 weight% and then coated with a composition  
 containing  
 50 weight% I and 50 weight% talc to coating ratio 6 weight% to give coated  
 fertilizers, which (10 g) were immersed in 200 mL water at 25° to  
 show 80% dissoln. 50 days later.

L107 ANSWER 11 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1997:509047 HCAPLUS  
 DOCUMENT NUMBER: 127:175943  
 TITLE: Coated granular fertilizers having degradable coating  
 films  
 INVENTOR(S): Chikami, Yoshihiro; Ashihara, Michiyuki  
 PATENT ASSIGNEE(S): Chisso Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09194280	A2	19970729	JP 1996-21846	19960112
PRIORITY APPLN. INFO.:			JP 1996-21846	19960112

IC ICM C05G003-00  
 CC 19-6 (Fertilizers, Soils, and Plant Nutrition)  
 IT 471-34-1, Calcium carbonate, biological studies 471-46-5, Oxamide  
 1332-37-2, **Iron** oxide, biological studies **6104-30-9**,  
 Isobutylidenediurea 7631-86-9, Silica, biological studies 14807-96-6,  
 Talc, biological studies 28100-23-4, Crotylidenediurea  
 RL: AGR (Agricultural use); PEP (Physical, engineering or chemical  
 process); BIOL (Biological study); PROC (Process); USES (Uses)  
 (filler; degradable polymer-coated granular fertilizers with controlled  
 dissoln. rate)  
 IT 76-22-2, Camphor 91-20-3, Naphthalene, biological studies 112-80-1,  
 Oleic acid, biological studies 555-36-2, **Ferric** stearate  
 7704-34-9, **Sulfur**, biological studies 7705-07-9, Titanous  
 chloride, biological studies 7758-94-3, **Ferrous** chloride  
 31567-90-5, Syndiotactic 1,2-polybutadiene  
 RL: AGR (Agricultural use); PEP (Physical, engineering or chemical  
 process); BIOL (Biological study); PROC (Process); USES (Uses)  
 (oxidative degradation accelerator; degradable polymer-coated granular  
 fertilizers with controlled dissoln. rate)  
 AB The granular fertilizers are coated with resin films containing  $\geq 1$  of  
 biodegradable polyesters and  $\geq 1$  of polyolefins, olefin copolymers,  
 poly(vinylidene chloride) (I), or vinylidene chloride (II) copolymers and  
 overcoated with resin films containing polyolefins, olefin copolymers, I, or  
 II copolymers containing substances that accelerate oxidative degradation of  
 the  
 polymers. The fertilizers have coating films that possess high strength  
 during manufacturing, storage, and transportation and controlled dissoln. rate  
 at the time of use. Fertilizers were coated with a composition containing  
 poly(3-hydroxy-3-methylpropionic acid) 25, ethylene-carbon monoxide  
 copolymer (III) 25, and talc 50 weight% to coating ratio 10 weight% and then  
 coated with a composition containing III 10, ethylene-vinyl acetate copolymer  
 40,  
 and talc 50 weight% and 3 weight% (based on the polymer composition) **ferric**  
 stearate to coating ratio 4 weight% to give coated fertilizers, which (10 g)  
 were immersed in 200 mL water at 25° to show 80% dissoln. 124 days  
 later.

L107 ANSWER 12 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1996:643894 HCAPLUS  
 DOCUMENT NUMBER: 125:274745  
 TITLE: Solid, nonionic surfactant-coated, water-soluble  
 fertilizer delivery system  
 INVENTOR(S): Latting, John Alvis; Wells, Ivan Russell; Randol,  
 Brett Lee  
 PATENT ASSIGNEE(S): USA  
 SOURCE: PCT Int. Appl., 38 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9623746	A1	19960808	WO 1996-US1319	19960131 <--
W:	AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ,			



TM, TT  
 RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

US 5679128	A	19971021	US 1995-381581	19950131	<--
CA 2211861	AA	19960808	CA 1996-2211861	19960131	<--
AU 9647735	A1	19960821	AU 1996-47735	19960131	<--
AU 717174	B2	20000316			
EP 807094	A1	19971119	EP 1996-903753	19960131	<--
EP 807094	B1	20011107			

R: AT, BE, DE, DK, ES, FR, GB, IT, NL, SE

BR 9606993	A	20001031	BR 1996-6993	19960131	<--
AT 208358	E	20011115	AT 1996-903753	19960131	
ES 2167545	T3	20020516	ES 1996-903753	19960131	

PRIORITY APPLN. INFO.: US 1995-381581 A 19950131  
 WO 1996-US1319 W 19960131

IC ICM C05C003-00  
 ICS C05G003-00

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

IT **Fertilizers**  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (nitrogen, solid, nonionic surfactant-coated, water-soluble fertilizer delivery system)

IT **Surfactants**  
 (nonionic, solid, nonionic surfactant-coated, water-soluble fertilizer delivery system)

IT 7783-20-2, Diammonium **sulfate**, biological studies  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (solid, nonionic surfactant-coated, water-soluble fertilizer delivery system)

AB A method for producing a dry bonded solid nonionic surfactant/fertilizer adjuvant system comprises spray-coating 70-99 weight % dry water-soluble, nitrogen fertilizer particles, preferably diammonium **sulfate**, with the surfactant, to give a the coated composition The preferred surfactant is dinonylphenol ethoxylate.

L107 ANSWER 13 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1996:73367 HCAPLUS

DOCUMENT NUMBER: 124:116210

TITLE: Odor-reducing, nutrient-enhancing composition for cultivating edible fungi.

INVENTOR(S): States, John B., Sr.; Turpin, Robert A., Jr.

PATENT ASSIGNEE(S): Pyrocap International Corp., USA

SOURCE: PCT Int. Appl., 26 pp.  
 CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9534521	A1	19951221	WO 1995-US6597	19950609 <--
W:	AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TT, UA			
RW:	KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT,			

LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE,  
SN, TD, TG

US 5574093 A 19961112 US 1994-258079 19940610 <--  
AU 9528146 A1 19960105 AU 1995-28146 19950609 <--  
EP 764144 A1 19970326 EP 1995-923667 19950609 <--

R: BE, DE, ES, FR, GB, IT, SE

PRIORITY APPLN. INFO.: US 1994-258079 19940610  
WO 1995-US6597 19950609

IC ICM C05F017-00  
ICS C05G003-06; A01G001-04

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

IT **Surfactants**  
(anionic, odor-reducing, nutrient-enhancing additive for mushroom culture)

IT **Fertilizers**  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(**nitrogen**, odor-reducing, nutrient-enhancing additive for mushroom culture)

IT **Surfactants**  
(nonionic, odor-reducing, nutrient-enhancing additive for mushroom culture)

IT 57-13-6, Urea, biological studies 77-92-9, Citric acid, biological studies 98-55-5,  $\alpha$ -Terpineol 111-42-2, Diethanolamine, biological studies 112-80-1, Oleic acid, biological studies 5989-27-5, (+)-Limonene 9004-82-4, Sodium lauryl ether **sulfate** 25155-30-0, Sodium dodecylbenzenesulfonate  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(odor-reducing, nutrient-enhancing additive for mushroom culture)

AB Provided is a composition comprising a nonionic surfactant, an anionic surfactant, a carboxylic acid, a volatile oil, an amine, a nitrogen source, and water. This composition is useful in treating composting material used for cultivating mushrooms, to reduce the malodorous gases. Mushrooms grown on such treated compost exhibit enhanced nutritional qualities, including lower sodium and increased protein levels, compared to mushrooms grown on conventional compost.

L107 ANSWER 14 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:890080 HCAPLUS

DOCUMENT NUMBER: 123:287127

TITLE: Flexible, fire-resistant polyether-polyurethane foam, and its manufacture

PATENT ASSIGNEE(S): Recticel, Belg.

SOURCE: Belg., 34 pp.  
CODEN: BEXXAL

DOCUMENT TYPE: Patent

LANGUAGE: Dutch

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 1007076	A3	19950307	BE 1993-488	19930512
PRIORITY APPLN. INFO.:			BE 1993-488	19930512
IC ICM C08G018-54				
ICS C08J009-00; C08K005-21				
CC 35-2 (Chemistry of Synthetic High Polymers)				
IT 108-78-1, Melamine, uses 115-96-8, Tris(2-chloroethyl) phosphate				
461-58-5, Dicyandiamide 756-79-6, Dimethyl methyl phosphonate				

1327-33-9, Antimony oxide 1330-78-5, Tricresyl phosphate 1332-07-6, Zinc borate **6104-30-9**, Isobutylenediurea 7783-20-2, Ammonium **sulfate**, uses 10124-31-9, Ammonium phosphate 11128-98-6, Ammonium borate 21645-51-2, Aluminum hydroxide, uses 26248-87-3, Tris(monochloropropyl) phosphate 26604-51-3, Tris(dichloropropyl) phosphate 28700-28-9, Tris(dibromopropyl) phosphate 33125-86-9, Tetrakis(2-chloroethyl)ethylene diphosphate

RL: TEM (Technical or engineered material use); USES (Uses)

(fireproofing agent; in flexible, fire-resistant polyether-polyurethane foam manufacture)

AB The foam, having d. 15-100 kg/m<sup>3</sup> and obtained by reacting an isocyanate and/or its derivs. with a polyether polyol in the presence of a **surfactant**, a catalyst, water as blowing agent, and a fireproofing agent, and which foam has an average primary OH group content (relative to the sum of primary and secondary OH groups) <50% and average equivalent weight 600-2000,

contains as fireproofing agent a linear HCHO-urea oligomer or mixture of oligomers having general formula NH<sub>2</sub>CONH(CH<sub>2</sub>NHCONH)<sub>n</sub>CH<sub>2</sub>NHCONH<sub>2</sub> (n = 0-50). The foam is manufactured by dispersing the fireproofing agent in the form of powder in the polyol, and contacting the polyol with the other reaction components. The fireproofing agent substantially improves the fire resistance of the foam while not affecting the quality of the foam as adversely as the common halogen- and/or P-containing fireproofing agents.

L107 ANSWER 15 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:675021 HCAPLUS

DOCUMENT NUMBER: 123:111074

TITLE: Nonblocking wax sealants for **sulfur**-coated urea fertilizers.

INVENTOR(S): Hudson, Alice P.; Woodward, Fred E.

PATENT ASSIGNEE(S): USA

SOURCE: U.S., 6 pp. Cont.-in-part of U.S. Ser. No. 640,840, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	US 5423897	A	19950613	US 1992-956384	19921005 <--
PRIORITY APPLN. INFO.:				US 1990-640840	19901220
IC	ICM C05C009-00				
	ICS C05G003-10				
NCL	071028000				
CC	19-6 (Fertilizers, Soils, and Plant Nutrition)				
ST	<b>sulfur</b> coated urea fertilizer sustained release				
IT	Amines, uses				
	RL: MOA (Modifier or additive use); USES (Uses)				
	(C16-30-alkyl; nonblocking wax sealants for <b>sulfur</b> -coated urea fertilizers)				
IT	<b>Surfactants</b>				
	(hydrocarbon-soluble; nonblocking wax sealants for <b>sulfur</b> -coated urea fertilizers)				
IT	Carnauba wax				
	(nonblocking wax sealants for <b>sulfur</b> -coated urea fertilizers)				
IT	Candelilla wax				

Montan wax  
 Paraffin waxes and Hydrocarbon waxes, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (nonblocking wax sealants for **sulfur**-coated urea fertilizers)

IT Fatty acids, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (alkyl esters, nonblocking wax sealants for **sulfur**-coated urea fertilizers)

IT Amides, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (fatty, nonblocking wax sealants for **sulfur**-coated urea fertilizers)

IT **Fertilizers**  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (**sulfur**-coated **urea**, sustained-release; nonblocking wax sealants for)

IT Amines, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (tallow alkyl, dihydrogenated; nonblocking wax sealants for **sulfur**-coated urea fertilizers)

IT 10525-37-8, Arachidylamine 13276-08-9, Stearylstearamide 14130-06-4, Behenylamine  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (nonblocking wax sealants for **sulfur**-coated urea fertilizers)

AB Mixts. of 50-99 % hydrocarbon waxes and 1-50 % hydrocarbon-soluble surfactants chosen from (a) primary and secondary C16-30 alkyl amines, (b) fatty acid amides of primary alkyl amines and/or (c) fatty acid esters of alkanols in which the alkyl groups of the acids, amines and alkanols contain 16 to 30 carbon atoms, provide sealant coatings for S-coated urea, which are superior moisture barriers and are nonblocking. Thus, they do not require the addition of clay or other fine-particle materials.

L107 ANSWER 16 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:576766 HCAPLUS  
 DOCUMENT NUMBER: 122:308765  
 TITLE: Bicarbonate **salt** pesticide composition  
 containing a clathrate spreader-sticker ingredient  
 INVENTOR(S): Winston, Anthony E.  
 PATENT ASSIGNEE(S): Church and Dwight Co., Inc., USA  
 SOURCE: PCT Int. Appl., 31 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9508916	A1	19950406	WO 1994-US8045	19940720 <--
W: AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, UZ, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5443835	A	19950822	US 1993-129429	19930930 <--
AU 9475500	A1	19950418	AU 1994-75500	19940720 <--
US 5583089	A	19961210	US 1995-437056	19950509 <--
PRIORITY APPLN. INFO.:			US 1993-129429	19930930

WO 1994-US8045

19940720

IC ICM A01N025-24

CC 5-6 (Agrochemical Bioregulators)

Section cross-reference(s): 19

IT Fungicides and Fungistats

Herbicides

**Surfactants**

(bicarbonate-pesticide composition containing clathrate spreader-sticker ingredient)

IT **Fertilizers**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(nitrogen-phosphorus-potassium,

bicarbonate-pesticide-fertilizer composition containing clathrate spreader-sticker ingredient)

AB A dry blend, free-flowing pesticide composition was prepared containing fungicidal

bicarbonate salt ingredient, and a spreader-sticker ingredient

which is a crystalline clathrate complex of a urea constituent and a normally liquid spreader-sticker constituent such as a nonionic surfactant. Thus, a free-flowing, water-dispersible powder composition was prepared containing

NaHCO<sub>3</sub> 48,K<sub>2</sub>CO<sub>3</sub> 30, guar gum 2, dioctyl sodium sulfosuccinate 3, ultrafine silica 2,

and urea clathrate 14. This composition was effective against powdery mildew of cantaloupe.

I107 ANSWER 17 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1994:408200 HCAPLUS

DOCUMENT NUMBER: 121:8200

TITLE: Metal ammonium phosphate-alkyleneurea buffered fertilizer.

INVENTOR(S): Moore, William P.

PATENT ASSIGNEE(S): Vigoro Corp., USA

SOURCE: U.S., 7 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5308373	A	19940503	US 1993-2272	19930108
IL 108143	A1	19970318	IL 1993-108143	19931222
WO 9415891	A1	19940721	WO 1994-US113	19940104
W: AU, BR, BY, CA, CZ, FI, JP, KR, NO, NZ, PL, RO, RU, SK, UA				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2152612	AA	19940721	CA 1994-2152612	19940104
AU 9459914	A1	19940815	AU 1994-59914	19940104
AU 672483	B2	19961003		
EP 678084	A1	19951025	EP 1994-906028	19940104
R: DE, ES, FR, GB, IE, IT, NL, SE				
JP 08505356	T2	19960611	JP 1994-516167	19940104
PRIORITY APPLN. INFO.:			US 1993-2272	19930108
			WO 1994-US113	19940104

IC ICM C05C009-00

ICS C05C009-02

NCL 071029000

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

- IT 1309-48-4, Magnesium oxide, uses 1314-13-2, Zinc oxide, uses 7439-89-6D, **Iron**, compds. 7439-95-4D, Magnesium, compds. 7439-96-5D, Manganese, compds. 7440-50-8D, Copper, compds. 7440-66-6D, Zinc, compds. 7664-38-2, Phosphoric acid, uses 7722-76-1, Monoammonium phosphate 7783-28-0, Diammonium phosphate  
 RL: USES (Uses)  
 (in manufacture of sustained-release metal ammonium phosphate-alkyleneurea buffered fertilizer)
- IT 1129-42-6, Crotonylidenediurea **6104-30-9**, Isobutylenediurea 9011-05-6, Urea-formaldehyde polymer 35650-81-8, Methyleneurea 51512-16-4, Polymethyleneurea 85589-32-8  
 RL: USES (Uses)  
 (in manufacture of sustained-release metal ammonium phosphate-containing buffered fertilizer)
- AB A method is given of preparing a new granular homogeneous metal ammonium phosphate-alkyleneurea buffered fertilizer, containing slow-releasing water-insol. N of two types, which provide sustained N release. The method is based on the discovery that a strong metal ammonium phosphate matrix may be formed to homogeneously contain fine particles of alkyleneurea compds. The new buffered fertilizer provides concentrated slow release N, and phosphate, and buffering amts. of metal nutrients. The alkyleneurea may be formed in-situ from liqs. concomitantly with the formation of the metal ammonium phosphates, or it may be admixed as finely divided alkyleneurea solids. The preferred alkyleneureas are methyleneureas and polymers, isobutylenediurea, and crotonylidenediurea. The metal nutrients are divalent and are preferably Mg, Mn, Zn and **Fe**, reacted as oxides, hydroxides, or carbonates. The ammonium ion is supplied as anhydrous ammonia, ammonium hydroxide, and preferably as ammonium phosphate. The phosphate is supplied as phosphoric acids or ammonium phosphate, preferably as a combination of the two. The method is most effectively carried out in a high-intensity mixer-reactor, comprising a cylindrical pan rotating around a near-vertical center containing a smaller diameter mixer rotating at a high rate of speed relative to that of the pan. The Mg, ammonium and P entities react at a mol ratio of 1.0:1.0:1.0, at about the b.p. of water and atmospheric pressure, to form a new fertilizer composition  
 containing 14-30% N, with 40-80% of the N insol. in cold water buffered to pH 6.0-8.0.

L107 ANSWER 18 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1994:216001 HCAPLUS

DOCUMENT NUMBER: 120:216001

TITLE: Effect of nitrogen fertilizers differing in release characteristics on the quantity of storage proteins in wheat

AUTHOR(S): Peltonen, Jari; Virtanen, Ari

CORPORATE SOURCE: Dep. Plant Product., Univ. Helsinki, Finland

SOURCE: Cereal Chemistry (1994), 71(1), 1-5

CODEN: CECHAF; ISSN: 0009-0352

DOCUMENT TYPE: Journal

LANGUAGE: English

CC 19-5 (Fertilizers, Soils, and Plant Nutrition)

Section cross-reference(s): 17

IT 461-58-5, Dicyandiamide 471-46-5, Oxamide **6104-30-9**, Isobutylidene diurea

RL: BIOL (Biological study)

(nitrogen fertilizer containing, wheat storage proteins and flour quality response to)

AB Sodium-dodecyl **sulfate** polyacrylamide-gel electrophoresis and laser-scanning densitometry were used to quantify storage proteins of spring wheat (*Triticum aestivum* L.) fertilized with various granular  $\text{NH}_4\text{NO}_3\text{-N}$  fertilizers, differing in their mode and rate of N release. Kadett, Ruso, and Reno cultivars were used in field trials. Their flour had the same high mol. weight glutenin subunit composition but differed in gliadin composition. Nitrogen fertilizer application improved breadmaking quality of wheat flour, mainly by increasing the quantity of low mol. weight gliadins. However,  $\omega$ -,  $\alpha$ -, and  $\beta$ -gliadins also increased in Kadett. The most pos. effect on flour protein concentration and loaf volume was obtained with an application of granular, dicyandiamide-regulated, slow-release N fertilizer.

L107 ANSWER 19 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1994:162812 HCAPLUS

DOCUMENT NUMBER: 120:162812

TITLE: Fertilizers applying onto leaves and their preparation method

INVENTOR(S): Shen, Qirong; Xu, Guohua; Yu, Ling

PATENT ASSIGNEE(S): Nanjing Agricultural University, Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.

CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1075705	A	19930901	CN 1993-100095	19930107 <--
CN 1033507	B	19961211		

PRIORITY APPLN. INFO.: CN 1993-100095 19930107

IC ICM C05G003-00  
ICS A01N061-00

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

IT **Surfactants**  
Plant hormones and regulators  
Trace elements, biological studies  
RL: USES (Uses)  
(in preparation of leaf application fertilizers)

IT **Fertilizers**  
RL: USES (Uses)  
(**nitrogen**, in preparation of leaf application fertilizers)

IT 64-17-5, Ethanol, biological studies 67-56-1, Methanol, biological studies 71-23-8, Propanol, biological studies 7647-01-0, Hydrochloric acid, biological studies 7664-93-9, **Sulfuric** acid, biological studies  
RL: USES (Uses)  
(in extraction of plant growth regulators from animal excrement in preparation of leaf application fertilizers)

AB The fertilizers for spraying leaves contain N 10-30 weight%, P2O5 5-20, K2O 10-30, trace elements 1-3, surfactants 1-2, plant growth regulators 1,000-2,000 ng/g, and carrier 15-73%. The fertilizers are prepared at low cost by mixing the organic trace elements, plant growth regulators isolated from animal excrements, surfactants, N and P and K fertilizers and

agitation. The fertilizers are useful for improved growth of vegetables, mulberry tree, crops, etc.

L107 ANSWER 20 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1994:162805 HCAPLUS  
 DOCUMENT NUMBER: 120:162805  
 TITLE: Manufacture of aminoureaformaldehyde fertilizer.  
 INVENTOR(S): Moore, William P.  
 PATENT ASSIGNEE(S): Vigoro Corp., USA  
 SOURCE: U.S., 9 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5266097	A	19931130	US 1992-999102	19921231
IL 108142	A1	19970318	IL 1993-108142	19931222
WO 9415890	A1	19940721	WO 1993-US12653	19931230
W: AU, BR, BY, CA, CZ, FI, JP, KR, NO, NZ, PL, RO, RU, SK, UA				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2152395	AA	19940721	CA 1993-2152395	19931230
AU 9469555	A1	19940815	AU 1994-69555	19931230
EP 677030	A1	19951018	EP 1994-905550	19931230
R: DE, FR, GB, IT				
JP 08505354	T2	19960611	JP 1993-516085	19931230
PRIORITY APPLN. INFO.:			US 1992-999102	19921231
			WO 1993-US12653	19931230

IC ICM C05C009-02  
 NCL 071028000  
 CC 19-6 (Fertilizers, Soils, and Plant Nutrition)  
 IT **6104-30-9**, Isobutylene diurea 7439-89-6, **Iron**, uses 7439-95-4, Magnesium, uses 7440-09-7, Potassium, uses 7440-70-2, Calcium, uses 7723-14-0, Phosphorus, uses 9011-05-6, Urea-formaldehyde polymer  
 RL: USES (Uses)  
 (aminoureaformaldehyde fertilizer containing)  
 IT 100-97-0, Hexamethylene tetramine, uses 1336-21-6, Ammonium hydroxide 6484-52-2, Ammonium nitrate, uses 7664-41-7, Ammonia, uses 7783-20-2, Ammonium **sulfate**, uses 10361-65-6, Ammonium phosphate 12125-02-9, Ammonium chloride, uses  
 RL: USES (Uses)  
 (in aminoureaformaldehyde fertilizer manufacture)  
 AB An aminoureaformaldehyde fertilizer is manufactured, which exhibits high cold water-insol. N (CWIN) levels and high Availability Indexes (AI). The method utilizes the discovery that ammonia compds., usually ammonium salts, inhibit urea-formaldehyde polymerization and decrease the formation of  
 hot water-insol. N (HWIN), and that the ammonium compds. take part in the reaction to form controlled-release compds. which are both cold water-soluble and -insol. The process is carried out at 60- 125°F., so that it may be completed in an order of magnitude less time than either the dilute or concentrated conventional com. ureaform processes, requiring 2-20 min for completion. In the process, 3-25% of the total N is supplied as ammonia-N, with the remainder from urea. The formaldehyde/urea/ammonia mol ratio is 1.0:1.0-2.0:0.05-1.0. The fertilizer is produced directly as



semi-dry granules, the drying of which may be completed in a conventional dryer such as a fluid bed, and exhibits urea conversions to CWIN of 50-85%, with AIs >45. The method is most effectively performed batchwise in a high intensity mixer-reactor-granulator, comprising a cylindrical pan rotating around a near-vertical axis and containing a small-diameter mixer rotating at a high speed relative to that of the pan.

L107 ANSWER 21 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1993:471758 HCAPLUS  
 DOCUMENT NUMBER: 119:71758  
 TITLE: Agglomeration inhibitors for urea fertilizers.  
 INVENTOR(S): Bocharov, V. V.; Minkov, V. A.; Bojtsov, E. N.;  
 Chmeleva, N. L.; Naumkina, L. V.; Zhuzhgov, V. F.;  
 Chuprakov, V. M.; Karpov, V. N.; Vasileva, T. A.  
 PATENT ASSIGNEE(S): USSR  
 SOURCE: U.S.S.R. From: Izobreteniya 1992, (43), 206.  
 CODEN: URXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Russian  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	SU 1570255	A1	19921123	SU 1988-4421613	19880505 <--
PRIORITY APLN. INFO.:				SU 1988-4421613	19880505
IC	ICM C05C009-00				
CC	19-6 (Fertilizers, Soils, and Plant Nutrition)				
IT	<b>Surfactants</b>				
	(anionic, in agglomeration inhibitors for urea fertilizers)				
IT	<b>Fertilizers</b>				
	RL: BIOL (Biological study)				
	(urea, agglomeration inhibitor for, anionic surfactants and CM-cellulose in)				
IT	98-11-3D, Benzenesulfonic acid, alkyl derivs., sodium salts				
	7376-31-0D, alkyl derivs.		7631-90-5D, alkyl derivs.	7632-05-5D,	
	Phosphoric acid, sodium salt, alkyl esters		16068-46-5D,		
	Phosphoric acid, potassium salt, alkyl esters				
	RL: USES (Uses)				
	(as surfactants in agglomeration inhibitors for urea fertilizers)				
AB	Agglomeration inhibitors for urea fertilizers are made of an anionic surfactant and Na CMC, at in the surfactant/Na CMC ratio of 40-97:3-60. The surfactant may be a Na alkylbenzenesulfonate, Na or triethanolamine alkylsulfonate, or K alkyl phosphates.				

L107 ANSWER 22 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1993:101163 HCAPLUS  
 DOCUMENT NUMBER: 118:101163  
 TITLE: Sustained-release fertilizer/pesticide compositions  
 INVENTOR(S): Rehberg, Bobby E.; Hall, William L.  
 PATENT ASSIGNEE(S): Vigoro Industries, Inc., USA  
 SOURCE: U.S., 9 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	US 5174804	A	19921229	US 1989-415162	19890929
	CA 2080304	AA	19940410	CA 1992-2080304	19921009
PRIORITY APPLN. INFO.:				US 1989-415162	19890929
IC	C05G009-00; A01N025-08				
NCL	071003000				
CC	19-6 (Fertilizers, Soils, and Plant Nutrition)				
	Section cross-reference(s): 5				
IT	108-78-1, Melamine, biological studies 471-46-5, Oxamide 1129-42-6, Crotonylidenediurea 1312-76-1, Potassium silicate <b>6104-30-9</b> 7757-93-9, Dicalcium phosphate 7785-21-9, Magnesium ammonium phosphate 25618-23-9, Calcium magnesium phosphate				
	RL: BIOL (Biological study)				
	(sustained-release fertilizer composition containing pesticide and)				
IT	7704-34-9, <b>Sulfur</b> , biological studies 298-04-4 607-91-0				
	1563-66-2, Carbofuran 43121-43-3 57837-19-1				
	RL: BIOL (Biological study)				
	(sustained-release pesticide composition containing fertilizer and)				
AB	Pesticides are incorporated into low-soluble fertilizers using binders, and the product is compressed into briquets or tablets. The fertilizer occludes the pesticide, resulting in a slow-release system. A mixture of oxalic acid diamide 35.0, Mg NH <sub>4</sub> phosphate 15.0, K silicate 25.5, Perk (micronutrient formulation) 10.5, binder (mixture of styrene-butadiene rubbers, heavy oil, and ligninsulfonate) 8.0, S 1.0, and Disyston 5.0% was compressed into briquets.				

L107 ANSWER 23 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1992:254769 HCAPLUS  
 DOCUMENT NUMBER: 116:254769  
 TITLE: Process for preparing chalk ameliorant suspension  
 INVENTOR(S): Semenova, M. M.; Alaverdieva, E. V.; Novikov, N. V.; Shakirova, I. A.  
 PATENT ASSIGNEE(S): Scientific-Research Institute of Liquid Fertilizers, USSR  
 SOURCE: U.S.S.R. From: Otkrytiya, Izobret. 1991, (36), 104. CODEN: URXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Russian  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	SU 1680682	A1	19910930	SU 1989-4713895	19890606 <--
PRIORITY APPLN. INFO.:				SU 1989-4713895	19890606
IC	ICM C05D005-00				
	ICS C09K017-00				
CC	19-6 (Fertilizers, Soils, and Plant Nutrition)				
IT	<b>Dispersing agents</b>				
	<b>Emulsifying agents</b>				
	(ammonium polyphosphate fertilizer, for chalk soil amendments)				
IT	<b>Fertilizers</b>				
	RL: BIOL (Biological study)				
	(ammonium polyphosphate, as dispersant and emulsifier for chalk soil amendments)				
IT	Polyphosphoric acids				
	RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)				

(ammonium **salts**, fertilizers, as dispersant and emulsifier  
for chalk soil amendments)

AB A lime soil amendment is prepared by mixing stripped chalk with a dispersing and emulsifying agent, in the form of a complex liquid fertilizer based on NH<sub>4</sub> polyphosphate.

L107 ANSWER 24 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1992:20332 HCAPLUS  
DOCUMENT NUMBER: 116:20332  
TITLE: Solid fertilizer for culturing ginseng  
INVENTOR(S): Jin, Guangyu; Qi, Anguo  
PATENT ASSIGNEE(S): Jilin Chemical Industry Corp., Peop. Rep. China  
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.  
CODEN: CNXXEV  
DOCUMENT TYPE: Patent  
LANGUAGE: Chinese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1052474	A	19910626	CN 1989-109288	19891211
PRIORITY APPLN. INFO.:			CN 1989-109288	19891211
IC ICM C05G001-00				
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)				
IT 471-34-1, Calcium carbonate, biological studies 546-93-0, Magnesium carbonate 1303-96-4, Borax 1305-78-8, Calcium oxide, biological studies 1309-48-4, Magnesium oxide, biological studies 1310-53-8, Germanium oxide, biological studies 1313-27-5, Molybdenum trioxide, biological studies 1314-13-2, Zinc oxide, biological studies 1344-70-3, Copper oxide 3486-35-9, Zinc carbonate <b>6104-30-9</b> , Isobutylidene diurea 7487-88-9, Magnesium <b>sulfate</b> , biological studies 7631-95-0, Sodium molybdate 7733-02-0, Zinc <b>sulfate</b> 7757-93-9, Calcium hydrogenphosphate 7758-98-7, Copper <b>sulfate</b> , biological studies 7779-88-6, Zinc nitrate 7785-87-7, Manganese <b>sulfate</b> 7790-53-6, Potassium metaphosphate 9002-89-5, Poly(vinyl alcohol) 10043-35-3, Boric acid, biological studies 10124-37-5, Calcium nitrate 10377-60-3, Magnesium nitrate 11129-60-5, Manganese oxide 12027-67-7, Ammonium paramolybdate 17375-37-0, Manganese carbonate				
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses) (fertilizer containing, for ginseng culturing)				
AB The title fertilizer contains isobutylidene diurea, Ge compds., and K metaphosphate. The fertilizer is highly effective and slow-release and may further contain trace elements, such as Zn, Mo, and Cu. Thus, a fertilizer was formulated containing 3.87 kg isobutylidene diurea, 0.9 kg GeO <sub>3</sub> , 6.01 kg K metaphosphate, 0.10 kg graphite, and 0.02 kg poly(vinyl alc.).				

L107 ANSWER 25 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1991:678918 HCAPLUS  
DOCUMENT NUMBER: 115:278918  
TITLE: Foam-type spray fertilizers containing surfactants, wax, and alcohols  
INVENTOR(S): Hatsutori, Takashi; Kushiara, Shingo; Tomono, Kotaro  
PATENT ASSIGNEE(S): Tomono Noyaku K. K., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent

Qazi 09/532,687

LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 03215380	A2	19910920	JP 1990-6886	19900116 <--
PRIORITY APPLN. INFO.:				JP 1990-6886	19900116
IC	ICM C05G005-00				
	ICS C05G001-00; C05G003-00				
CC	19-6 (Fertilizers, Soils, and Plant Nutrition)				
IT	<b>Surfactants</b>				
	(spray fertilizers containing)				
IT	<b>Fertilizers</b>				
	RL: BIOL (Biological study)				
	( <b>nitrogen-phosphorus-potassium</b> , foam-type				
	spray containing alcs. and surfactants and)				
AB	The title composition prepared by adding a surfactant, a wax, an alc. and a				
	propellant to a N-P-K fertilizer. The composition may also contain a coloring				
	agent and a flavor. Thus, a spray fertilizer was prepared containing N				
	0.1-5.0,				
	H3PO4 0.1-5.0, K 0.1-5.0, other components (Mg, S, Ca, Mn, B, <b>Fe</b>				
	, Cu, Zn, Mo, vitamins, etc.), nonionic surfactants 1.0-5.0, and wax and				
	alc. 1.0-10%.				

L107 ANSWER 26 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1989:533243 HCAPLUS  
DOCUMENT NUMBER: 111:133243  
TITLE: Aqueous liquid fertilizers  
INVENTOR(S): Billia, Mario; Klincak, Josef  
PATENT ASSIGNEE(S): Mifa A.-G., Switz.  
SOURCE: Ger. Offen., 4 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	DE 3823539	A1	19890126	DE 1988-3823539	19880712 <--
	CH 672486	A	19891130	CH 1987-2708	19870716 <--
PRIORITY APPLN. INFO.:				CH 1987-2708	19870716
IC	ICM C05G001-00				
	ICS C05G003-06; C05D011-00				
ICA	B01F017-42				
CC	19-6 (Fertilizers, Soils, and Plant Nutrition)				
IT	<b>Fertilizers</b>				
	RL: BIOL (Biological study)				
	( <b>nitrogen-phosphorus-potassium</b> -				
	<b>trace element</b> , liquid, surfactants-containing)				
IT	<b>Surfactants</b>				
	(nonionic, fertilizers containing, aqueous)				
IT	7439-89-6, <b>Iron</b> , biological studies			7439-96-5, Manganese,	
	biological studies			7440-50-8, Copper, biological studies	25322-68-3,
	Polyethylene glycol			25322-68-3D, alkylphenyl ethers	
	RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)				
	(fertilizers containing, aqueous liquid)				

AB An aqueous liquid fertilizer (pH 2-7) comprises nonionic surfactant(s), polyethylene glycol (as surfactant solubilizer), trace element(s), N, P, K, and plant growth regulator(s). An aqueous fertilizer comprised N 2.0, P 1.0, K 2.0, Mg 0.2, Fe 0.1, Mo 0.001, Mn 0.002, ethoxylated alkanols 0.2, and N6-furfuryladenine  $1 \times 10^{-7}\%$  by weight. The fertilizers are especially suitable for ornamentals and may also be used in hydroponics.

L107 ANSWER 27 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1989:458975 HCAPLUS

DOCUMENT NUMBER: 111:58975

TITLE: Manufacture of fire-resistant flexible polyurethane foams

INVENTOR(S): Jourquin, Lucien; Du Prez, Eddie

PATENT ASSIGNEE(S): Recticel, Belg.

SOURCE: Eur. Pat. Appl., 21 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 307987	A2	19890322	EP 1988-201856	19880831
EP 307987	A3	19900411		
EP 307987	B1	19951025		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
BE 1000930	A6	19890516	BE 1987-1053	19870918
AT 129512	E	19951115	AT 1988-201856	19880831
AU 8821774	A1	19890323	AU 1988-21774	19880901
AU 612693	B2	19910718		
FI 8804232	A	19890319	FI 1988-4232	19880914
DK 8805125	A	19890319	DK 1988-5125	19880915
CA 1308862	A1	19921013	CA 1988-577445	19880915
NO 8804119	A	19890320	NO 1988-4119	19880916
JP 01158023	A2	19890621	JP 1988-234670	19880919
US 4895878	A	19900123	US 1988-246395	19880919

PRIORITY APPLN. INFO.:

BE 1987-1053 19870918

IC ICM C08K005-21

ICS C08K005-16; C08J009-00; C08G018-38; C08G018-54; C08K009-00

CC 37-6 (Plastics Manufacture and Processing)

IT 101-84-8D, Diphenyl oxide, brominated 108-78-1, 1,3,5-Triazine-2,4,6-triamine, uses and miscellaneous 115-96-8, Tris(2-chloroethyl) phosphate 461-58-5 1309-64-4, Antimony oxide (Sb2O3), uses and miscellaneous 1330-78-5, Tricresyl phosphate 1332-07-6 **6104-30-9**, Isobutylene diurea 7783-20-2, Ammonium **sulfate**, uses and miscellaneous 9002-86-2, Poly(vinyl chloride) 10124-31-9, Ammonium phosphate 21645-51-2, Aluminum hydroxide (Al(OH)3), uses and miscellaneous 22694-75-3, Ammonium borate 26604-51-3, Tris(dichloropropyl) phosphate 28700-28-9, Tris(dibromopropyl) phosphate 33125-86-9, Tetrakis(2-chloroethyl) ethylene diphosphate

RL: MOA (Modifier or additive use); USES (Uses)  
(fireproofing agents, for polyurethane foams)

IT 57-13-6, Urea, uses and miscellaneous

RL: USES (Uses)

(**sulfur**-coated, fireproofing agents, for polyurethane foams)

AB The title foams are manufactured from high-mol. weight polyols, polyisocyanates,

catalysts, crosslinkers and/or chain extenders, blowing agents, and fireproofing agents [linear urea-HCHO oligomer (I), powdered urea, or dicyandiamide, and optionally others]. Mixing a polyether triol 100, H<sub>2</sub>O 3.5, CCl<sub>3</sub>F 3, catalysts 0.95, **surfactant** 0.5, I 50, and (ClCH<sub>2</sub>CH<sub>2</sub>O)<sub>3</sub>PO (II) 10 parts with Desmodur MT58 (NCO index 100) gave a foam with O index 32, California 117 A (furniture fire test) satisfactory, and MVSS 302 (automobile fire test) self extinguishing; vs. 21, failed, and failed, resp., without I and II.

L107 ANSWER 28 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1989:456482 HCAPLUS

DOCUMENT NUMBER: 111:56482

TITLE: Composition for ensuring the colloidal compatibility of solutions and/or suspensions of N fertilizers mixed with emulsions and/or suspensions of pesticides

INVENTOR(S): Koncz, Gabor; Adanyi, Jozsef; Frommer, Lajos; Inczedy, Peter; Bohus, Peter; Fodor, Tamas; Konok, Ferenc, Mrs.

PATENT ASSIGNEE(S): Kukorica es Iparinoveny Termelesi Egyuttmukodes, Hung.

SOURCE: Hung. Teljes, 21 pp.

CODEN: HUXXB

DOCUMENT TYPE: Patent

LANGUAGE: Hungarian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	HU 45468	A2	19880728	HU 1986-3937	19860915 <--
PRIORITY APPLN. INFO.:				HU 1986-3937	19860915
IC	ICM C05G003-00				
	ICS A01N025-30				
CC	19-6 (Fertilizers, Soils, and Plant Nutrition)				
	Section cross-reference(s): 5				
IT	<b>Fertilizers</b>				
	RL: BIOL (Biological study)				
	( <b>nitrogen</b> , liquid formulations containing pesticides and, stabilizers for)				
IT	<b>Surfactants</b>				
	(nonionic, stabilizers containing, for liquid nitrogen fertilizer mixts. with pesticides)				
IT	1582-09-8	1698-60-8, Pyramine	1861-40-1, Flubalex	1912-24-9,	
	Atrazine	7704-34-9, <b>Sulfur</b> , uses and miscellaneous			
	51218-45-2	51990-04-6, Alirox	55283-68-6, Buvilan	55512-33-9,	
	Lentagran	103088-17-1, Anelda plus			
	RL: BIOL (Biological study)				
	(liquid formulations containing nitrogen fertilizers and, stabilizers for)				
AB	The colloidal stability of liquid N fertilizer mixts. with liquid pesticides is ensured by the addition of ethoxylated nonionic surfactants, buffered with fatty amine polyglycol ethers. A solution (252 g) of 25.4% nonylphenol polyglycol ether monophosphate, 47.6% diphosphate, 0.35% triphosphate, 11.65% nonylphenol polyglycol ether and 15% water was mixed with 41.4 g ethoxylated C12 fatty acid amine, 4.6 g N-dipolyethyleneglycol N-stearylammonium polyglycol ether phosphate, 60 g MeOH and 42.3 g water, to give a stabilizer composition Liquid N fertilizer (98 mL) was treated with 0.5 mL of the composition and 2 mL Alirox (80% emulsion concentrate), to give an emulsion that was stable for 121 min.				

Qazi 09/532,687

L107 ANSWER 29 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1989:456421 HCAPLUS

DOCUMENT NUMBER: 111:56421

TITLE: Conditioning of ammonium nitrate granulate produced at the Pulawy nitrogen works

AUTHOR(S): Markiewka, Halina; Wystup, Eugeniusz; Skalski, Andrzej; Kozłowska, Jolanta

CORPORATE SOURCE: Inst. Nawozow Sztucznych, Pulawy, Pol.

SOURCE: Przemysl Chemiczny (1989), 68(2), 64-7  
CODEN: PRCHAB; ISSN: 0033-2496

DOCUMENT TYPE: Journal

LANGUAGE: Polish

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

ST ammonium nitrate fertilizer caking surfactant diatomite; ammonium **sulfate** ammonium nitrate granule strengthIT **Fertilizers**

RL: BIOL (Biological study)

(ammonium nitrate, conditioning of granulated)

IT **Surfactants**

(anionic, alkyl-aryl-sulfonate, ammonium nitrate fertilizer caking control by diatomite and)

IT 7783-20-2, Ammonium **sulfate**, biological studies

RL: BIOL (Biological study)

(ammonium nitrate fertilizer granule strength increase by)

IT **6484-52-2**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(fertilizers, ammonium nitrate, conditioning of granulated)

AB Amending NH<sub>4</sub>NO<sub>3</sub> melt with 0.7% (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>-SO<sub>4</sub><sup>2-</sup> afforded granules of satisfactory strength. Coating granules with 0.05-0.1% anionic alkyl-aryl-sulfonate surfactant, followed by 1.3% diatomite powder containing 96% particles <20 µm and having a sp. surface of 36 m<sup>2</sup>/g, controlled caking.

L107 ANSWER 30 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1987:553467 HCAPLUS

DOCUMENT NUMBER: 107:153467

TITLE: Efficiency of isobutylidene diurea, **sulfur**-coated urea and urea plus nitrapyrin, compared with divided dressings of urea, for dry matter production and nitrogen uptake of ryegrass

AUTHOR(S): Halevy, J.

CORPORATE SOURCE: Dep. Soil Chem. Plant Nutr., Volcani Cent., Bet Dagan, 50250, Israel

SOURCE: Experimental Agriculture (1987), 23(2), 167-79

CODEN: EXAGAL; ISSN: 0014-4797

DOCUMENT TYPE: Journal

LANGUAGE: English

CC 19-5 (Fertilizers, Soils, and Plant Nutrition)

ST ryegrass growth nitrogen uptake fertilizer; **sulfur** coated urea<sup>6</sup> fertilizer ryegrass; urea fertilizer nitrapyrin ryegrass; isobutylidene diurea fertilizer ryegrassIT **6104-30-9**, Isobutylidene diurea

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(fertilizer experiment with, with ryegrass)

AB Two slow-release N fertilizers, isobutylidene diurea (IBDU) and S-coated ureas (SCU), and urea plus nitrapyrin were compared with urea alone for their effect on the growth and N uptake by ryegrass (Lolium perenne) in a

greenhouse experiment IBDU and the SCU were applied in 1 dressing before sowing and the urea in 5 dressings (one after each cut). Dry-matter yield and N uptake of the 6 cuts at the optimum levels of 3 and 6 g N pot<sup>-1</sup> (equivalent to 1120 and 2240 kg N ha<sup>-1</sup> on a weight basis) were similar for the slow-release fertilizers and urea, showing that SCU and IBDU can be effective sources N for ryegrass at rates for above those regarded as a safe conventional N fertilizers when applied in a single dose. Nitrapyrin at 20 ppm effectively inhibited nitrification for 12 wk, then its effect rapidly declined, disappearing after 18 wk. Ryegrass growth was retarded by nitrapyrin treatment, probably as a result of an accumulation of ammonium-N in the soil.

L107 ANSWER 31 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1987:514845 HCAPLUS

DOCUMENT NUMBER: 107:114845

TITLE: Evaluation of oxamide as a slow-release nitrogen source on Kentucky bluegrass

AUTHOR(S): Mosdell, D. K.; Daniel, W. H.; Freeborg, R. P.

CORPORATE SOURCE: Purdue Exp. Stn., West Lafayette, IN, 47907, USA

SOURCE: Agronomy Journal (1987), 79(4), 720-5

CODEN: AGJOAT; ISSN: 0002-1962

DOCUMENT TYPE: Journal

LANGUAGE: English

CC 19-5 (Fertilizers, Soils, and Plant Nutrition)

IT **6104-30-9**, Isobutylidene diurea

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(fertilizer experiment with, with Kentucky bluegrass)

AB Oxamide (31% N), an amide of oxalic acid, and a 7:3 N ratio of oxamide and urea were evaluated as slow-release N sources on Kentucky bluegrass (*Poa pratensis*) at West Lafayette, IN, on a Toronto silt loam soil (fine silty, mixed mesic, Udollic Ochraqualfs). Two particle sizes of oxamide, C (1-2.8 mm) and F (<0.85 mm), were applied as a granular and liquid suspension treatment, resp. Addnl. treatments consisted of applying isobutylidene diurea (IBDU), sulfur-coated urea (SCU), and urea. Two and four applications were made, with a total annual application rate of 196 kg N ha<sup>-1</sup> yr<sup>-1</sup>. Recovery of N in the tissue from applications of oxamide C was 51% compared to 41, 39, and 38% for IBDU, oxamide F, and SCU, resp., averaged over 3 yr. Initial change in visual turf quality and clipping yields in response to oxamide C was slow, similar to that of IBDU; however, residual N release was equal to that of IBDU and greater than that of SCU. Adding urea to oxamide C increased initial yields and turf quality but reduced the duration of turf response as compared to applications of oxamide C alone. At two applications of 98 kg N ha<sup>-1</sup>, oxamide proved to be a good, slow-release source of N. At four applications per yr, initial clipping yields resulting from spring oxamide F applications were lower than those from urea, but turf quality in response to residual N tended to be greater than that of urea. Late fall applications of oxamide F reduced soil NO<sub>3</sub><sup>-</sup> concns. shortly after application and in early spring as compared to fall applications of urea. Oxamide F at four applications generally produced a more desirable turf response than did similar applications of urea.

L107 ANSWER 32 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1987:83514 HCAPLUS

DOCUMENT NUMBER: 106:83514

TITLE: Influence of adjuvants on foliar absorption of nitrogen and phosphorus by soybeans

AUTHOR(S): Stein, Larry A.; Storey, J. Benton



CORPORATE SOURCE: Dep. Hortic. Sci., Texas A and M Univ., College  
Station, TX, 77843, USA  
SOURCE: Journal of the American Society for Horticultural  
Science (1986), 111(6), 829-32  
CODEN: JOSHB5; ISSN: 0003-1062  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
CC 19-5 (Fertilizers, Soils, and Plant Nutrition)  
Section cross-reference(s): 4  
IT Humectants  
**Surfactants**  
Alcohols, biological studies  
Amines, biological studies  
Carbohydrates and Sugars, biological studies  
Hydrocarbons, biological studies  
RL: BIOL (Biological study)  
(as foliar fertilizer adjuvants, leaf absorption of nitrogen and  
phosphorus by soybean and phytotoxicity in relation to)  
IT **Fertilizers**  
RL: BIOL (Biological study)  
(foliar, adjuvants for, leaf absorption of **nitrogen** and  
phosphorus by soybean response to and phytotoxicity of)  
AB Adjuvants at various concns. were evaluated for phytotoxicity and capacity  
to enhance foliar absorption of N and P. Some adjuvants among the  
following classes were phytotoxic to soybean (Glycine max) leaves at  
concns. of 0.25 and 0.5% active ingredient on a volume or weight/volume basis:  
sulfonates, alcs., ethoxylated hydrocarbons, esters, **sulfates**,  
and amines. Many alcs., sulfonates, ethoxylated hydrocarbons,  
polyethylene glycols., carbohydrates, proteins, and phosphates were not  
phytotoxic at concns. as high as 1.0%. Sometimes increasing phytotoxicity  
occurred at increasing concns., but the humectants, such as glycerol and  
propylene glycol, were not phytotoxic at concns. of 10.0%. Selected  
adjuvants were mixed with a foliar fertilizer (12.0N-1.7P-3.3K-0.55) and  
evaluated for enhancement of foliar absorption of N and P. The average  
increases in percentage of N and P for the glycerol [56-81-5], lecithin,  
and Pluronic L-121 [9003-11-6] (an ethoxylated hydrocarbon), and foliar  
fertilizer combinations, resp., were 8.9, 2.2, and 2.5% for N and 34.2,  
27.6, and 20.8% for P over the foliar fertilizer control, resp., for the 3  
adjuvants.

L107 ANSWER 33 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1986:220793 HCAPLUS  
DOCUMENT NUMBER: 104:220793  
TITLE: Effect of different **salt** leachates on the  
movement of some phosphorus containing pesticides in  
soils using thin layer chromatography  
AUTHOR(S): Sharma, S. R.; Singh, R. P.; Ahmed, S. R.  
CORPORATE SOURCE: Fac. Eng. Technol., Aligarh Muslim Univ., Aligarh,  
202001, India  
SOURCE: Ecotoxicology and Environmental Safety (1986  
, 11(2), 229-40  
CODEN: EESADV; ISSN: 0147-6513  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
CC 5-6 (Agrochemical Bioregulators)  
Section cross-reference(s): 19, 80  
ST pesticide movement soil **salt** leachate  
IT Pesticides

(movement of, in soils, **salt** leachate effect on, TLC study of)

IT **Salt** effect  
(on phosphorus-containing pesticide movement in soils, TLC study of)

IT **Surfactants**  
(phosphorus-containing pesticides movement in soil response to, TLC study of)

IT Soils  
(phosphorus-containing pesticides movement in, **salt** leachate effect on, TLC study of)

IT **Fertilizers**  
RL: BIOL (Biological study)  
(**ammonium nitrate**, phosphorus-containing pesticides movement in soil response to, TLC study of)

IT **Fertilizers**  
RL: BIOL (Biological study)  
(sodium **nitrate**, phosphorus-containing pesticides movement in soil response to, TLC study of)

IT 60-51-5 62-73-7 121-75-5 122-14-5 298-00-0 333-41-5 640-15-3  
8022-00-2  
RL: BIOL (Biological study)  
(movement of, in soils, **salt** leachate effect on, TLC study of)

AB The influence of pH, leachates of alkaline and saline **salts**, inorg. fertilizers, and surfactants on the movement of 8 organophosphorus pesticides, viz., DDVP [62-73-7], diazinon [333-41-5], Ekatin [640-15-3], Folithion [122-14-5], malathion [121-75-5], metasystox [8022-00-2], parathion methyl [298-00-0], and Rogor [60-51-5] has been studied using soil TLC techniques. The variation in the movement of pesticides under different solvent amendments are expressed in terms of  $R_f$ ,  $R_b$  ( $R_b$  = distance moved by bottom of spot/distance traveled by eluent) and  $R_M$  ( $R_M$  =  $\log (1/R_f - 1)$ ) values and are explained on the basis of adsorption and leachability.

L107 ANSWER 34 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1985:131171 HCAPLUS

DOCUMENT NUMBER: 102:131171

TITLE: Defoaming of ammonium nitrate-containing **salt** melts

INVENTOR(S): Krueger, Wolfgang; Haage, Klaus; Guenther, Eberhard; Kochmann, Werner; Fuertig, Helmut; Benecke, Klaus; Roethling, Tilo; Hoese, Werner; Sonnek, Georg; Weiland, Bernd

PATENT ASSIGNEE(S): VEB Chemiekombinat Bitterfeld, Ger. Dem. Rep.

SOURCE: Ger. (East), 11 pp.

CODEN: GEXXA8

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 213666	A1	19840919	DD 1983-247920	19830214 <--
PRIORITY APPLN. INFO.:			DD 1983-247920	19830214
IC C05G001-08; C01C001-18				
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)				
IT Antifoaming agents				

- (cationic ampholytic and nonionic surfactant as, for ammonium nitrate-containing **salt** melt defoaming)
- IT **Foaming**  
(prevention of, of ammonium nitrate-containing **salt** melts by ampholytic cationic or nonionic surfactants)
- IT **Amines, compounds**  
RL: BIOL (Biological study)  
(sulfonated, as antifoaming agents for ammonium nitrate-containing **salt** melts)
- IT **Fertilizers**  
RL: BIOL (Biological study)  
(~~ammonium nitrate~~-calcium, defoaming of **ammonium nitrate**-containing **salt** melts in manufacture of)
- IT **Surfactants**  
(amphoteric, cationic, as defoaming agents for ammonium nitrate-containing **salt** melts)
- IT 6484-52-2D, **salt** melts  
RL: BIOL (Biological study)  
(defoaming agents for, cationic ampholytic and nonionic nitrogen-containing surfactants as)
- IT 112-03-8 143-27-1D, hydrogen phosphates 1602-97-7 95525-04-5  
RL: BIOL (Biological study)  
(defoaming by, of ammonium nitrate-containing **salt** melts in calcium ammonium nitrate fertilizer manufacture)
- AB The foam stability of NH<sub>4</sub>NO<sub>3</sub>-containing **salt** melts, formed during CaNH<sub>4</sub> nitrate manufacture was reduced by adding substrate-specific cationic ampholytic or non-ionic N-containing surfactants to the melt system NH<sub>4</sub>NO<sub>3</sub>-solid. Aliphatic primary or secondary amines, especially with organic residues, which are partially unsatd. and containing ≥12 C atoms, their **salts**, and quaternary product are used as the cationic N-containing surfactants. Thus, 13 g of a foaming lime powder which forms a stable 6-cm foam layer was sprayed with 15 mg of N,N-bis(phosphomethyl)glycine [6484-52-2] dissolved in 2 mL H<sub>2</sub>O. The modified lime powder showed a decreased foaming of a 2-cm height and no foam layer was formed. Similarly, spraying a mash of 40 g NH<sub>4</sub>NO<sub>3</sub> and 13 g lime powder which at 160° formed a 6-cm high foam layer, with 15 mg hexadecylamine HCl [1602-97-7] dissolved in 2 mL H<sub>2</sub>O reduced the foam layer to a 2.5-cm height and finally prevented the formation of a sterile foam.

L107 ANSWER 35 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1984:489739 HCAPLUS

DOCUMENT NUMBER: 101:89739

TITLE: Anticaking treatment of granulated fertilizers. III. .  
Superficial treatment of granulated commercial fertilizers using macromolecular substances

AUTHOR(S): Bartos, Vladimir; Waradzin, Walter

CORPORATE SOURCE: Duslo, N. P., Sala, Czech.

SOURCE: Chemicky Prumysl (1984), 34(6), 292-6  
CODEN: CHPUA4; ISSN: 0009-2789

DOCUMENT TYPE: Journal

LANGUAGE: Slovak

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

IT Sulfonic acids, compounds

RL: BIOL (Biological study)

(alkylarene, sodium **salts**, anticaking agents for urea containing poly(vinyl alc.) and)

IT **Fertilizers**

RL: BIOL (Biological study)  
 (ammonium nitrate-calcium, anticaking macromol.  
 agents for, for superficial treatment)

IT **Surfactants**  
 (anionic, anticaking agents for fertilizers containing)

IT **Fertilizers**  
 RL: BIOL (Biological study)  
 (nitrogen-phosphorus-potassium,  
 anticaking macromol. agents for, for superficial treatment)

IT **Fertilizers**  
 RL: BIOL (Biological study)  
 (urea, anticaking macromol. agents for, for superficial  
 treatment)

AB Expts. with anticaking treatment of fertilizers showed that atactic  
 polypropylene [9003-07-0] and fractions of low-pressure polyethylene  
 [9002-88-4] in mixts. with a hydrophobic agent gave good results; the  
 anticaking action was not better than when aliphatic amines were used.  
 Polypropylene and polyethylene improved, however, the action of the  
 bitumen-oil system in case of urea. Aqueous poly(vinyl acetate) dispersions  
 were ineffective. Partially hydrolyzed poly(vinyl alc.) (PVA)  
 [9002-89-5] with anionic tensides was highly effective in improving the  
 storage and use properties of urea fertilizers. The caking of urea was  
 least when an aqueous solution of PVA and SDS [2386-53-0] used at a weight  
 ratio of  
 1:2 was applied at 0.02%.

L107 ANSWER 36 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1984:190885 HCAPLUS  
 DOCUMENT NUMBER: 100:190885  
 TITLE: Calcium-nitrogen suspension fertilizer  
 INVENTOR(S): Kraft, Jaroslav; Hasek, Milan; Valenta, Vlastimil;  
 Plasil, Jiri; Vokral, Vaclav  
 PATENT ASSIGNEE(S): Czech.  
 SOURCE: Czech., 4 pp.  
 CODEN: CZXXA9  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Czech  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 207849	B	19810831	CS 1979-7123	19791022 <--
PRIORITY APPLN. INFO.:			CS 1979-7123	19791022

IC C05C005-04

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)  
 Section cross-reference(s): 49

IT **Surfactants**  
 Bentonite, biological studies  
 Limestone, biological studies  
 RL: BIOL (Biological study)  
 (in calcium-nitrogen suspension fertilizer manufacture)

IT **Fertilizers**  
 RL: BIOL (Biological study)  
 (calcium-nitrogen, suspension, manufacture of)

AB Ca-N suspension fertilizers contain 1-8 weight % of H2O-soluble Ca in the form  
 of an aqueous solution of Ca(NO3)2, 5-30% of H2O-insol. Ca in the form of Ca  
 salt limestone, and (or) Mg-containing compds., 0.5-4% gel-forming

clays, and 0.01-2 weight % surfactants. Thus, to 550 g of an aqueous solution of  $\text{Ca}(\text{NO}_3)_2$  containing 10.8% Ca and 7.65% N, 50 g of an aqueous suspension containing 15 weight % bentonite, 0.05% of cationic ARMFLO 49 surfactant, and 400 g ground limestone were added under constant stirring. The stirring was continued for 2 min after all supplement addition. The suspension obtained contained  $\text{H}_2\text{O}$ -soluble Ca 5.9, total Ca 21.2, and  $\text{H}_2\text{O}$ -soluble N 4.2 weight %. The fertilizer supplied nutrients and decreased the soil acidity.

L107 ANSWER 37 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1984:138077 HCAPLUS

DOCUMENT NUMBER: 100:138077

TITLE: Mechanism of the modifying action of surfactants preventing the caking of complex fertilizers

AUTHOR(S): Kuvshinnikov, I. M.; Tikhonovich, Z. A.; Troitskaya, S. A.; Frolkina, V. A.

CORPORATE SOURCE: USSR

SOURCE: Khimicheskaya Promyshlennost (Moscow, Russian Federation) (1984), (1), 25-7  
CODEN: KPRMAW; ISSN: 0023-110X

DOCUMENT TYPE: Journal

LANGUAGE: Russian

CC 19-6 (Fertilizers, Soils, and Plant Nutrition)

IT **Surfactants**

(complex fertilizer caking preventing, mechanism of action of)

IT Bitumens

RL: BIOL (Biological study)

(fertilizer **salt** hydrophobicity improvement by, surfactant anticaking action mechanism in relation to)

IT Diffusion

(of fertilizer **salts**, surfactant prevention of, anticaking action mechanism in relation to)

IT Hydrophobicity

(of **salts**, surfactant monolayer effect on)

IT Hygroscopicity

(of **salts**, surfactant monolayer reduction of)

IT Fatty acids, properties

RL: PRP (Properties)

(still residues, **salt** hydrophobicity in relation to, surfactant anticaking action mechanism in relation to)

IT Agglomeration preventers

(surfactants, for fertilizer **salt** hydrophobicity improvement, action mechanism of)

IT **Fertilizers**

RL: BIOL (Biological study)

(sodium **nitrate**, surfactant prevention of caking of, mechanism of)

IT 57-09-0 143-19-1

RL: BIOL (Biological study)

(fertilizer **salt** hydrophobicity improvement by, surfactant anticaking action mechanism in relation to)

AB In expts. with KCl and  $\text{NaNO}_3$ , with cetyltrimethylammonium bromide (I) [57-09-0], Na oleate [143-19-1], fatty acid still residues, and bitumen as the surfactants, the hydrophobicity of KCl granules was most improved at a surfactant concentration of (3-5) + 10-3%, which corresponds to a monolayer coat. The surfactant monolayer coat decreased the **salt**

hygroscopicity, but after long (>150 h) storage of the samples in humid environment (80% relative humidity) the hydrophobic effect decreased practically to zero. Of the surfactants used I decreased the hygroscopicity most. However, the monolayer coat resulting in improved hydrophobicity does not prevent caking substantially. For that purpose surfactant amts. of 0.05-0.1% are required, but at these surfactant amts. the fertilizer hygroscopicity increases. Therefore, the anticaking action of surfactants is not so much related to hygroscopicity as to diffusion rates and solubility. In model expts. on the relation between the solubility rate of

KCl and surfactant concentration in the solution and on the relation between **salt** caking and diffusion coeffs. (in aqueous solns.) and solubility, it was established that the anticaking action of surfactants results from the blocking of the transport pathways of the diffusional flow of the **salts**. Thus, during granule treatment the surfactants should be applied in amts. permitting their penetration into the granule and occupation of all interphase spaces and their orientation with the hydrophilic parts towards the most hygroscopic components, preventing thereby the diffusion of these components towards the granule surface and contact zone.

L107 ANSWER 38 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1983:521286 HCAPLUS

DOCUMENT NUMBER: 99:121286

TITLE: Isobutylidene diurea and **sulfur**-coated urea as nitrogen sources for potatoes

AUTHOR(S): Elkashif, M. E.; Locascio, S. J.; Hensel, D. R.

CORPORATE SOURCE: IFAS, Univ. Florida, Gainesville, FL, 32611, USA

SOURCE: Journal of the American Society for Horticultural Science (1983), 108(4), 523-6  
CODEN: JOSHB5; ISSN: 0003-1062

DOCUMENT TYPE: Journal

LANGUAGE: English

CC 19-5 (Fertilizers, Soils, and Plant Nutrition)

ST nitrogen fertilizer potato; isobutylidene diurea fertilizer potato; urea **sulfur** coated potato

IT Potato  
(isobutylidene diurea and **sulfur**-coated urea as nitrogen fertilizers for)

IT Fertilizers  
RL: BIOL (Biological study)  
(**sulfur**-coated urea, soil chemical properties response to, efficacy on potato in relation to)

IT **6104-30-9**  
RL: BIOL (Biological study)  
(as nitrogen fertilizer for potatoes)

AB Isobutylidene diurea (IBDU) [**6104-30-9**] and S-coated urea (SCU) alone or in combinations with NH<sub>4</sub>NO<sub>3</sub> were evaluated as N sources for potatoes (*Solanum tuberosum*) on 2 sandy soils. N was applied either all preplant or in split application at 134 or 201 kg N/ha. Tuber yields were highest with NH<sub>4</sub>NO<sub>3</sub> alone or with NH<sub>4</sub>NO<sub>3</sub> combined with IBDU or SCU, and were lowest with 100% IBDU and SCU. Marketable yields obtained with NH<sub>4</sub>NO<sub>3</sub> were 25% and 27% higher than with 100% IBDU and SCU, resp. Marketable and total yields increased and tuber sp. gr. decreased slightly with increased N. Split applications of N increased marketable and total yields at one location. Leaf N, Mg, and Ca concns. were higher and K was lower with NH<sub>4</sub>NO<sub>3</sub> alone, or with NH<sub>4</sub>NO<sub>3</sub> with IBDU or SCU, than with IBDU and SCU. N sources had no significant effect on soil total soluble salts,

nitrate-N, or ammonium-N, 7 and 12 wk after fertilization.

L107 ANSWER 39 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1983:483744 HCAPLUS  
 DOCUMENT NUMBER: 99:83744  
 TITLE: Anionic surfactant compositions effective in aqueous solutions of strongly ionizable **salts**  
 INVENTOR(S): Kaneko, Thomas M.; Dutton, Daniel R.; Kim, Bongsub  
 PATENT ASSIGNEE(S): BASF Wyandotte Corp. , USA  
 SOURCE: U.S., 6 pp. Division of U.S. Ser. No. 122,209.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4382013	A	19830503	US 1981-289492	19810803 <--
US 4450001	A	19840522	US 1980-122209	19800219 <--

PRIORITY APPLN. INFO.: US 1980-122209 19800219  
 IC B01F017-00; B01F017-30; E11D017-00  
 NCL 252354000  
 CC 5-6 (Agrochemical Bioregulators)  
 Section cross-reference(s): 19  
 IT **Surfactants**  
 (for emulsions containing fertilizers and pesticides)  
 IT **Fertilizers**  
 RL: BIOL (Biological study)  
 (**ammonium nitrate-urea**, emulsifiable  
 concs. containing biocide and)  
 AB Highly stable emulsion concs. of biocides for liquid fertilizer compns. are prepared with a surfactant blend containing .apprx.50-95% by weight of at least 1  
 polyoxyalkylene glycol ethoxylate ester Y [(A)n-(C2H4O)m-H]x (A = alkylene oxide; Y = initiator of  $\leq 20$  C; x =  $\geq 2$ ; n = integer such that the mol. weight ranges 1000-2500; m = integer such that oxyethylene content constitutes 20-80% of the total oxyalkylene), 50-5% by weight of an other anionic surfactant, and a biocide. This concentrate is then added to a liquid NH4NO3-urea-water fertilizer, and is stable for 15 min. Thus, the concentrate is prepared containing tetrahydrofuran-oxirane copolymer monomaleate [86595-84-8], tetronic 150R-1 [11111-34-5], and the biocide 2-chloro-2',6'-diethyl-N-(methoxymethyl)acetanilide [15972-60-8]. Other suitable biocides include  $\alpha,\alpha,\alpha$ -trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidene [1582-09-8], and N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzeneamine [40487-42-1].

L107 ANSWER 40 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1982:84540 HCAPLUS  
 DOCUMENT NUMBER: 96:84540  
 TITLE: Effect of urea and slow release nitrogen fertilizers on ethylene formation under anaerobic conditions in soils of Bangladesh  
 AUTHOR(S): Islam, M. S.  
 CORPORATE SOURCE: Div. Soil Sci., Bangladesh Agric. Res. Inst., Dacca, Bangladesh  
 SOURCE: Journal of the Indian Society of Soil Science (1981), 29(1), 92-6

CODEN: JINSA4; ISSN: 0019-638X

DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CC 19-3 (Fertilizers, Soils, and Plant Nutrition)  
 Section cross-reference(s): 10  
 IT Fertilizers  
 RL: BIOL (Biological study)  
 (sulfur-coated urea, ethylene formation response to, in soils  
 under anaerobic conditions)  
 IT **6104-30-9**  
 RL: BIOL (Biological study)  
 (ethylene formation response to, in soils under anaerobic conditions)  
 AB In an anaerobic incubation experiment in the laboratory with urea, S-coated  
 urea  
 (SCU), and isobutylidenediurea (IBDU) [**6104-30-9**] added to 4  
 representative agricultural soils of Bangladesh, the various sources of N  
 markedly enhanced ethylene [74-85-1] formation. With increasing pH of  
 the soils, there was less production of ethylene. Addition of IBDU to brown  
 hill  
 and gray floodplain soils caused the formation of more ethylene than when  
 urea or SCU was used. There was little difference between treatments in  
 the calcareous dark gray floodplain and red-brown terrace soils.

L107 ANSWER 41 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1982:51288 HCAPLUS  
 DOCUMENT NUMBER: 96:51288  
 TITLE: Evaluation of slow-release nitrogen sources on Baron  
 Kentucky bluegrass  
 AUTHOR(S): Hummel, N. W., Jr.; Waddington, D. V.  
 CORPORATE SOURCE: Pennsylvania Agric. Exp. Stn., University Park, PA,  
 16802, USA  
 SOURCE: Soil Science Society of America Journal (1981), 45(5),  
 966-70  
 CODEN: SSSJD4; ISSN: 0361-5995  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CC 19-5 (Fertilizers, Soils, and Plant Nutrition)  
 ST nitrogen fertilizer Kentucky bluegrass; sulfur coated urea  
 Kentucky bluegrass; ureaform Kentucky bluegrass; isobutylidene diurea  
 Kentucky bluegrass  
 IT **6104-30-9** 35650-81-8  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (fertilizer experiment with, with Kentucky bluegrass)  
 AB Several N sources were evaluated for maintenance fertilization of Kentucky  
 bluegrass (Poa pratensis) turf. Treatments included isobutylidene diurea  
 (IBDU) [**6104-30-9**] materials of 2 particle-size ranges,  
 S-coated ureas (SCU) in 2 size ranges from Canadian Industries Limited  
 (CIL), SCU from the Tennessee Valley Authority (TVA), ureaformaldehyde  
 (UF), activated sewage sludges, Organiform, soluble N sources, and  
 combinations of slow-release and soluble N. All N sources were applied at a  
 rate of 197 kg N/ha/yr, divided into equal fall and spring applications  
 for 3 consecutive years. Weekly clipping yields, color ratings, and  
 annual N recovery were the response criteria. SCU produced a more uniform  
 growth and had higher N recovery than IBDU, which was characterized by a  
 delayed response following fertilization. Turfgrass response to the CIL  
 and TVA SCU materials applied alone was similar. Particle-size effects  
 with CIL SCU were slight; however, N release was quicker from fine IBDU  
 than coarse IBDU. Slow-release characteristics were also observed for



ureaform, Organiform, and the sludges, but turf quality was generally poor for these treatments. Substituting soluble N for a portion of the N from SCU gave inferior turfgrass response as compared to SCU applied alone. When soluble N was used in conjunction with ureaform, Organiform LT, and IBDU, turfgrass response was improved over that obtained when these N sources were used alone. Recovery of N in the clippings was greatest for soluble N sources and SCU treatments (48-52%), whereas lowest values (15-29%) were associated with ureaform, Organiform, and sludges.

L107 ANSWER 42 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1981:514005 HCAPLUS

DOCUMENT NUMBER: 95:114005

TITLE: Reactions of urea, **sulfur**-coated urea and isobutylidene diurea in anaerobic Bangladesh soils

AUTHOR(S): Islam, M. S.

CORPORATE SOURCE: Div. Soil Sci., Bangladesh Agric. Res. Inst., Dacca, Bangladesh

SOURCE: Journal of Bangladesh Academy of Sciences (1981), 5(1), 21-8

CODEN: JBACDF; ISSN: 0378-8121

DOCUMENT TYPE: Journal

LANGUAGE: English

CC 19-3 (Fertilizers, Soils, and Plant Nutrition)

ST urea soil; **sulfur** coated urea soil; isobutylidene diurea soil

IT Fertilizers

RL: RCT (Reactant); RACT (Reactant or reagent)

(**sulfur**-coated urea, reactions of, in anaerobic Bangladesh soils)

IT **6104-30-9**

RL: RCT (Reactant); RACT (Reactant or reagent)

(decomposition of, in soils of Bangladesh, under anaerobic conditions)

AB In laboratory incubation expts. the decomposition of 3 N fertilizers for  $\leq 32$  days under anaerobic conditions was studied in 4 soils with initial pH 4.2-7.9. Isobutylidenediurea (IBDU) [**6104-30-9**] was completely hydrolyzed to ammonium in the most acid (brown hill) soil, but in the calcareous dark gray floodplain soil only 16% was recovered, mostly as nitrate. The other soils gave intermediate results. The results show the importance of pH for IBDU hydrolysis. S-coated urea released N as nitrate plus ammonium (amts. depending on pH) only to 60% of the total except in the red-brown terrace soil, from which 90% was recovered, .apprx.1/3rd as nitrate and 2/3rds as ammonium. From urea, 91% was recovered as ammonium from the most acid soil and 68% as nitrate from neutral a gray floodplain soil; however, only 63% was recovered in all as nitrate in the calcareous soil either because of NH<sub>3</sub> losses or denitrification. In the red-brown terrace soil, 83% was recovered with almost 1/2 the N as nitrate and 1/2 as ammonium.

L107 ANSWER 43 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1980:469845 HCAPLUS

DOCUMENT NUMBER: 93:69845

TITLE: Pepper response to **sulfur**-coated urea, mulch and nitrogen rate

AUTHOR(S): Locascio, S. J.; Fiskell, J. G. A.

CORPORATE SOURCE: Veg. Crops Dep., Univ. Florida, Gainesville, FL, 32611, USA

SOURCE: Proceedings of the Florida State Horticultural Society (1980), Volume Date 1979, 92, 112-15

CODEN: PFSHA7; ISSN: 0097-1219

DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CC 19-4 (Fertilizers, Soils, and Plant Nutrition)  
 ST nitrogen fertilizer mulch red pepper; **sulfur** coated urea red pepper; ureaform red pepper; isobutylidene diurea red pepper  
 IT Red pepper  
 (fertilizer experiment with, mulching and nitrogen rate and **sulfur**-coated urea in)  
 IT **6104-30-9**  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (fertilizer expts. with, on red pepper)  
 AB Bell pepper (*Capsicum annuum*) response to broadcast applications of various S-coated urea (SCU) formulations, urea-HCHO (UFA), and IBDU [**6104-30-9**] were compared with urea applied broadcast, banded, banded with strip-mulch, or broadcast under paper or polyethylene mulch. All treatments were applied at 50, 125, and 200 lb N/acre. Significant effects of N source treatments were obtained in both years of the study. Highest pepper yields were produced with the more rapid release formulations of SCU, urea applied broadcast in 3 applications, and urea applied under paper or polyethylene mulches. Yields were lowest with urea banded, urea applied with strip-mulch, and with UFA. Maximum yields were obtained with most treatments with the application of 200 lb N/acre. Plant and soil-N levels were also significantly influenced by treatment.

L107 ANSWER 44 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1980:444978 HCAPLUS  
 DOCUMENT NUMBER: 93:44978  
 TITLE: Mineralization of urea and urea derivatives in waterlogged soils  
 AUTHOR(S): Islam, M. S.  
 CORPORATE SOURCE: Dep. Soil Sci., Bangladesh Agric. Univ., Mymensingh, Bangladesh  
 SOURCE: Proc. Natl. Semin. Nitrogen Crop Prod. (1978), Meeting Date 1977, 107-18. Organising Comm., Natl. Semin. Nitrogen Crop Prod.: Mymensingh, Bangladesh.  
 CODEN: 43MEAB  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English  
 CC 19-4 (Fertilizers, Soils, and Plant Nutrition)  
 IT 496-46-8 **6104-30-9**  
 RL: PROC (Process)  
 (mineralization of, in waterlogged soils)  
 AB The rates of mineralization of urea and urea derivs. were studied in a laboratory anaerobic incubation experiment Urea, urea phosphate [4401-74-5] and  
 S-coated urea were hydrolyzed rapidly and, even at the highest level of application, had disappeared in >8 days. The presence of PO43- depressed the pH in the early stages. Hydrolysis of the less soluble organic derivative of  
 urea, isobutylidene diurea [**6104-30-9**], ureaform and glycoluril [496-46-8] was very much slower and in the case of glycoluril a lag period of 8 to 16 days occurred before hydrolysis began. In the initial stages, the system was anaerobic, but between days 8 and 16, a change to partial aerobic conditions occurred. At this stage nitrification commenced and at day 16, nitrite was detected. Reduction of Fe (III) increased with time, reaching a maximum at day 32. More Fe (II) was produced in the presence of organic derivs. of urea than with the other fertilizers, possibly due to stabilization by organic ligands. From day 16,

nitrification, denitrification and reduction of Fe (III) proceeded together even through Eh values indicated that oxidation of Fe (II) would be expected. This did not occur until after day 32. Once nitrification began, denitrification quickly followed so that for all 6 fertilizers, except at the highest level of application, virtually all the mineralized-N had been lost by denitrification at the end of the experiment

L107 ANSWER 45 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1980:179890 HCAPLUS

DOCUMENT NUMBER: 92:179890

TITLE: Comparison between slow-release nitrogen fertilizers and **sulfate** of ammonia for use in rain-fed rice cultivation in northern Ghana

AUTHOR(S): Carson, A. G.; Quansah, J. E.

CORPORATE SOURCE: Crops Res. Inst., Nyankpala, Ghana

SOURCE: Ghana Journal of Agricultural Science (1977), 10(1), 33-7

CODEN: GJASAF; ISSN: 0533-8662

DOCUMENT TYPE: Journal

LANGUAGE: English

CC 19-4 (Fertilizers, Soils, and Plant Nutrition)

IT Rice

(slow-release nitrogen and ammonia **sulfate** fertilizers for, grain yield in relation to)

IT **6104-30-9**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(fertilizer experiment with, on rice, grain yield in relation to)

AB The efficiency of slow-release N fertilizers which are applied once at planting was compared with the standard practice of applying (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> split at planting and at maximum tillering stage in field trials from 1973 to 1975. Split application of (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> gave higher yields than either the S-coated urea (SCU) or the isobutylidenediurea (IBDU) [**6104-30-9**] fertilizer under non-permanent flooded conditions, although differences were not significant. However, SCU was more efficient under permanent flooded conditions than under non-permanent flooded conditions. There were also no significant differences in the response of the rice cultivars to the various N sources. SCU could provide optimum grain yields when applied at time of planting.

L107 ANSWER 46 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1980:75132 HCAPLUS

DOCUMENT NUMBER: 92:75132

TITLE: Mineralization and field effectiveness of ordinary and coated urea, urea-aldehyde condensation product and urea treated with nitrification inhibitor

AUTHOR(S): Nair, K. P. P.; Sharma, P. B.

CORPORATE SOURCE: Coll. Agric., Govind Ballabh Pant Univ. Agric.

Technol., Pantnagar, India

SOURCE: Journal of Agricultural Science (1979), 93(3), 623-7

CODEN: JASAB; ISSN: 0021-8596

DOCUMENT TYPE: Journal

LANGUAGE: English

CC 19-4 (Fertilizers, Soils, and Plant Nutrition)

ST nitrification inhibitor urea treatment; **sulfur** coated urea corn; shellac coated urea corn; isobutylidenediurea nitrification inhibitor soil

IT 5600-21-5 **6104-30-9**

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(nitrification inhibition by)

AB A laboratory incubation study followed by a field experiment was made in a silty clay loam soil (pH 6-9) at Pantnagar, India, on the effectiveness of ordinary urea, coated urea (S and shellac-coated), (isobutylidenediurea (I) [6104-30-9] and urea blended with nitrification inhibitor AM [5600-21-5] and neem (a non-edible oil seed obtained from Azadirachta indica) cake. Whereas untreated urea and I hydrolyzed rapidly, leaving no trace of urea-N after 2 wk, S-coated urea mineralized quite slowly and retained urea-N for as long as 4 wk after incubation. Urea blended with neem cake was intermediate. Of all the materials tested, S-coated urea showed maximum nitrification inhibition. A combination of 1/3 S-coated urea at planting + 2/3 ordinary urea 30 days later yielded 12-3% more corn grain than ordinary urea in the same proportion at the same times of application.

L107 ANSWER 47 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1980:40658 HCAPLUS

DOCUMENT NUMBER: 92:40658

TITLE: Phosphorus fertilizers

INVENTOR(S): Kochetkov, S. P.; Malakhova, N. N.; Khryashchev, S. V.; Filin, V. N.; Zorikhina, Z. A.; Zarubina, V. A.

PATENT ASSIGNEE(S): USSR

SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1979, (42), 92.

CODEN: URXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Russian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 697486	T	19791115	SU 1977-2503630	19770704 <--
PRIORITY APPLN. INFO.:			SU 1977-2503630	19770704

IC C05B011-00

CC 19-5 (Fertilizers, Soils, and Plant Nutrition)

IT **Surfactants**

(phosphorus fertilizers manufacture in presence of)

IT **Fertilizers**

RL: PROC (Process)

(nitrogen-phosphorus, manufacture of, in presence of surfactants)

IT **Fertilizers**

RL: PROC (Process)

(nitrogen-phosphorus-potassium, manufacture of, in presence of surfactants)

IT **Sulfite liquor, biological studies**

RL: BIOL (Biological study)

(spent, phosphorus fertilizers manufacture in presence of)

AB Title fertilizers were prepared by mechanochem. decomposition of phosphate raw material in a N-containing solution at a N/P2O5 ratio of 1:0.5-2.5 at pH 5-8.5 in

the presence of 0.01-0.1% surfactants (based on the weight of the solid phase) having a particle size  $\leq 0.1-1.5 \mu$ . NPK fertilizers were manufactured by adding K phosphate or KCl to the liquid phase prior to grinding at a N:P2O5:K2O ratio 1:0.5-2.5:0.5-1.5. Solns. of urea,  $\text{NH}_4\text{NO}_3$ ,  $\text{NH}_3$ , or their mixts. were used as the N-containing solution Na tripolyphosphate,

poly(vinyl alc.) [9002-89-5], carboxymethylcellulose [9004-32-4], or spent **sulfite** liquor was used as the surfactant.

L107 ANSWER 48 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1976:541937 HCAPLUS

DOCUMENT NUMBER: 85:141937

TITLE: Response of 'Sunturf' bermudagrass to slow-release nitrogen sources under greenhouse conditions

AUTHOR(S): Boonduang, A.; Kanehiro, Y.; Murdoch, C. L.

CORPORATE SOURCE: Dep. Agron. Soil Sci., Univ. Hawaii, Honolulu, HI, USA

SOURCE: HortScience (1976), 11(4), 379-81

CODEN: HJHSAR; ISSN: 0018-5345

DOCUMENT TYPE: Journal

LANGUAGE: English

CC 19-4 (Fertilizers, Soils, and Plant Nutrition)

IT **6104-30-9**

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)  
(Bermuda grass response to)

AB Slow-release N sources (sewage sludge, Agriform, Osmocote, S-coated urea (SCU) and isobutylidene diurea (IBDU) [**6104-30-9**]) and a soluble N source ((NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>) were applied to soil at the rates of 224 and 448 kg N/ha before planting bermudagrass (Cynodon dactylon). Yield, percent N, and N recovery at 3 cuttings at 30 day intervals were higher at the 448 kg/ha rate than at the 224 kg/ha rate and were highest in the 1st of 3 cuttings and decreased in the 2nd and final cuttings. The slow-release N sources, except Agriform, generally gave higher yield, percent N, and N recovery values than ammonium **sulfate**, especially at the 3rd cutting and at the higher N rate. Osmocote, SCU and IBDU generally gave higher values than sewage sludge and Agriform.

L107 ANSWER 49 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1974:490448 HCAPLUS

DOCUMENT NUMBER: 81:90448

TITLE: Watermelon response to **sulfur**-coated urea, mulches, and nitrogen rates

AUTHOR(S): Locascio, Sal J.; Fiskell, J. G. A.; Lundy, H. W.

CORPORATE SOURCE: Veg. Crops Dep., Inst. Food Agric. Sci., Gainesville, FL, USA

SOURCE: Proceedings of the Florida State Horticultural Society (1974), Volume Date 1973, 86, 201-4

CODEN: PFSHA7; ISSN: 0097-1219

DOCUMENT TYPE: Journal

LANGUAGE: English

CC 19-4 (Fertilizers, Soils, and Plant Nutrition)

ST watermelon nitrogen fertilizer mulch; urea **sulfur** coated watermelon

IT **6104-30-9**

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(fertilizer expts. with, with watermelon)

AB Watermelon response to various formulations of S-coated urea applied broadcast were compared with noncoated urea either broadcast, banded, banded with a strip mulch, or broadcast under paper or polyethylene mulches. Significant effects of N source treatment were obtained in 2 of the 3 seasons evaluated. Fruit yields with S-coated urea at 30 and 40% dissoln. rates, and with isobutylenediethylurea as the N sources were similar to either treatments with urea applied broadcast under polyethylene or paper mulch, under strip mulch, or when urea or NH<sub>4</sub>NO<sub>3</sub> was

applied in 3 applications. In 1 of the 2 years, lowest yields were produced by urea applied either broadcast or banded without mulch. Significant quadratic yield responses to N rate occurred in 2 of the 3 seasons. Fruit production increased with an increase in N rate from 50 to 125 lb/acre. A further increase of N to 200 lb/acre depressed yields slightly. Tissue N reflected rate and N source effect.

L107 ANSWER 50 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1973:535842 HCAPLUS

DOCUMENT NUMBER: 79:135842

TITLE: Evaluation of isobutylidenediurea and **sulfur**-coated urea for grass and lettuce

AUTHOR(S): Prasad, Munoo

CORPORATE SOURCE: Kinsealy Res. Cent., Agric. Inst., Dublin, Ire.

SOURCE: Journal of Agricultural and Food Chemistry (1973), 21(5), 919-22  
CODEN: JAFCAU; ISSN: 0021-8561

DOCUMENT TYPE: Journal

LANGUAGE: English

CC 19-4 (Fertilizers, Soils, and Plant Nutrition)

ST nitrogen fertilizer grass lettuce; isobutylidenediurea grass lettuce; urea **sulfur** coated plant; soil nitrogen fertilizer plant

IT English ryegrass

Lettuce

(fertilizer expts. with, with isobutylidenediurea and **sulfur**-coated urea, soil type effect in)

IT Fertilizer experiment

(with isobutylidenediurea and **sulfur**-coated urea, with English ryegrass and lettuce, soil type effect in)

IT **6104-30-9**

RL: BIOL (Biological study)

(as fertilizer, crop response and soil type in relation to)

AB Isobutylidenediurea (IBDU), **sulfur**-coated urea (SCU), and Ca NH<sub>4</sub>

nitrate (cAN) were compared at 3 rates for their effect on 2 contrasting crops, lettuce and English ryegrass, and in 2 contrasting soil types, organic and mineral, in a greenhouse experiment Five cuts of grass and three harvests of lettuce were taken over a period of 5 months. In peat with grass and in soil with lettuce, the cumulative yields from the N fertilizers were of the order IBDU > SCU > CAN, in peat with lettuce it was IBDU = SCU » CAN, and in soil with grass there were only slight differences. In contrast to CAN, both IBDU and SCU gave sustained response, although early response to SCU was slow. For the 1st month the only substantial losses of N through leaching were from CAN; some leaching losses also occurred from IBDU with lettuce.

L107 ANSWER 51 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1973:146794 HCAPLUS

DOCUMENT NUMBER: 78:146794

TITLE: Slow-release fertilizer granules

INVENTOR(S): Yoshida, Shun

PATENT ASSIGNEE(S): Mitsubishi Chemical Industries Co., Ltd.

SOURCE: Jpn. Tokkyo Koho, 8 pp.

CODEN: JAXXAD

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 47013683	B4	19720425	JP 1967-70263	19671102
IC	B01J; C05GBC				
CC	19-5 (Fertilizers, Soils, and Plant Nutrition)				
IT	<b>6104-30-9</b>				
	RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses) (fertilizers containing, granulation of)				
AB	Mixts. of isobutylidene diurea, fused P fertilizers, and optionally KCl were mixed with primary <b>wetting agents</b> (H2O and optionally urea) and secondary ones (diluted mineral acids) to give fertilizer granules of 1.5-3-mm grain size especially useful for water cultures.				

L107 ANSWER 52 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1973:28405 HCAPLUS  
 DOCUMENT NUMBER: 78:28405  
 TITLE: Influence of nitrification inhibitors and slow release nitrogen materials transformations of fertilizer nitrogen in soils of fluctuating moisture content  
 AUTHOR(S): Prasad, Rajendra; Rajale, G. B.  
 CORPORATE SOURCE: Div. Agron., Indian Agric. Res. Inst., New Delhi, India  
 SOURCE: Soil Biology & Biochemistry (1972), 4(4), 451-7  
 CODEN: SBIOAH; ISSN: 0038-0717  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CC 19-3 (Fertilizers, Soils, and Plant Nutrition)  
 IT 471-46-5 **6104-30-9**  
 RL: BIOL (Biological study)  
 (denitrification and nitrification of, alternating soil moisture effect on)  
 IT 57-13-6, biological studies  
 RL: BIOL (Biological study)  
 (sulfur-coated, nitrification and denitrification of, alternating soil moisture effect on)  
 AB A laboratory study was made of N transformations in a sandy clay loam given either urea with and without nitrification inhibitors or slow-release N fertilizers. Moisture conditions were field capacity, continuous flooding, and alternate flooding and drying. Urea N was mineralized and fairly well conserved in soil either at field capacity or under continuous flooding, but was rapidly lost under alternate flooding and drying. Denitrification losses were reduced with nitrification inhibitors. Oxamide, isobutylidene diurea, and S-coated urea were as effective as the inhibitors in reducing losses under alternate flooding and drying.

L107 ANSWER 53 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 1970:99565 HCAPLUS  
 DOCUMENT NUMBER: 72:99565  
 TITLE: Formaldehyde condensates of creosote oil sulfonate for agriculture. I. Effects on nitrification in soils  
 AUTHOR(S): Kobo, Kenzo; Ishikawa, Yohsuke  
 CORPORATE SOURCE: Univ. Tokyo, Tokyo, Japan  
 SOURCE: Nippon Dojo Hiriyogaku Zasshi (1969), 40(9), 388-93  
 CODEN: NIDHAX; ISSN: 0029-0610  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

CC 20 (Fertilizers, Soils, and Plant Nutrition)

IT **Surfactants, preparation**

(creosote oil sulfonate-formaldehyde reaction products)

IT **Fertilizers**

RL: BIOL (Biological study)

(**nitrogen**, nitrification in soils of, cremol effect on)

AB The effect of byproducts of coal distillation on changes in soil or fertilizer

N

was studied. The compound used was a formaldehyde condensate of creosote oil sulfonate (cremol), and was a surfactant. The  $\text{NH}_4$  or Ca **salt** of cremol inhibited nitrification of soil or fertilizer N. Cremol was a condensed material with a wide range of mol. weight, and the greater the degree of condensation the greater the ability to inhibit nitrification. With a decrease in the degree of condensation less cremol was sorbed by soils, and more remained in the soil solution. The effects of cremol were related to soil properties, the greater the sorption by the soil, the less the inhibition of nitrification. In dry soils cremol seemed to inhibit soil N from being mineralized to ammonium or nitrate N, but ammonium N tended to accumulate owing to decreased nitrification.

L107 ANSWER 54 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1965:54683 HCAPLUS

DOCUMENT NUMBER: 62:54683

ORIGINAL REFERENCE NO.: 62:9706b-d

TITLE: Phytotoxicity of dalapon on *Cynodon dactylon* as influenced by gibberellic acid, surfactants, and nitrogen fertilization

AUTHOR(S): Kannan, S.

CORPORATE SOURCE: Agr. Coll. Res. Inst., Coimbatore, India

SOURCE: Madras Agricultural Journal (**1963**), 50(12), 463-9

CODEN: MAAJAP; ISSN: 0024-9602

DOCUMENT TYPE: Journal

LANGUAGE: English

CC 71 (Plant-Growth Regulators)

IT **Surface-active substances**

(dalapon effect on Bermuda grass in relation to)

IT **Fertilizers**

(**nitrogen**, dalapon effect on Bermuda grass in relation to)

IT 125-67-7, Gibberellic acid, potassium **salt**

(dalapon effect on Bermuda grass in relation to)

AB  $\text{NH}_4\text{NO}_3$  was applied at 2.7 g./pot on uniform plants 12 in. tall; the K

**salt** of gibberellic acid was applied one week after at 50 and 100 ppm., 3, 2, and 1 week before the plants were treated with dalapon (with and without adjuvant; i.e., a surfactant containing alkylaryl polyethylene glycol-free fatty acids-iso-ProH was mixed with dalapon, 1% by vol).

Application of the herbicide was made at one part of acid equivalent dissolved in 125 parts of demineralized water by weight. Foliar application consisted in dipping the aerial portion of the grass in the solution for 30 sec. All the plants treated with gibberellin grew faster than the untreated, but the combined effect of N + gibberellin was much greater than that of gibberellin alone and slightly greater than that of N alone. Six weeks after treatment with dalapon, complete necrosis was recorded on all N-treated plants; this effect was more marked after treatment with N + gibberellin. Surfactant did not increase the effectiveness of dalapon. 27 references.

L107 ANSWER 55 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN



ACCESSION NUMBER: 1963:438603 HCAPLUS  
DOCUMENT NUMBER: 59:38603  
ORIGINAL REFERENCE NO.: 59:6944e-g  
TITLE: Preventing the agglutination of ammonium nitrate and  
nitro-chalk by using surface-active agents  
AUTHOR(S): Jankowiak, Edward; Waligora, Zbigniew; Zajonz, Hubert  
SOURCE: Przemysl Chemiczny (1963), 42(3), 140-5  
CODEN: PRCHAB; ISSN: 0033-2496  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
CC 73 (Fertilizers, Soils, and Plant Nutrition)  
IT **Fertilizers**  
(ammonium nitrate and nitro-chalk, agglutination  
of, surfactants in preventing)  
IT **Surface-active substances**  
(fertilizer (NH<sub>4</sub>NO<sub>3</sub> and nitro-chalk) agglutination prevention by)  
IT 98-11-3, Benzenesulfonic acid  
(alkyl derivative Na salts, agglutination prevention of NH<sub>4</sub>NO<sub>3</sub>  
and nitro-chalk by)  
AB The effect of various surface-active agents on the agglutination of NH<sub>4</sub>NO<sub>3</sub>  
and nitro-chalk was studied. The addition of these agents prevents  
agglutination by lowering the surface tension of the saturated aqueous  
solution of  
NH<sub>4</sub>NO<sub>3</sub>. Powdering of fertilizers containing surface-active agents increases  
their friability. Addition of Sulfapol (Na salt of  
alkylbenzenesulfonic acid) did not increase the explosive and inflammable  
properties of granulated NH<sub>4</sub>NO<sub>3</sub>. The method of coating fertilizers with  
Sulfapol has been worked out on a com. scale. Expts. on storing large  
amts. of fertilizers confirmed the suitability of the application of  
surface-active agents. Graphs, tables, and drawing are included.

L107 ANSWER 56 OF 56 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1960:3423 HCAPLUS  
DOCUMENT NUMBER: 54:3423  
ORIGINAL REFERENCE NO.: 54:800h-i  
TITLE: Fertilizer  
INVENTOR(S): Gupta, Jagannath; Seshadri, Kadambi; Lobo, Joseph;  
Rao, Maddalli N.  
PATENT ASSIGNEE(S): Council of Scientific and Industrial Research  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	IN 61585		19590715	IN	<--
CC	15 (Soils and Fertilizers)				
IT	<b>Fertilizers</b> (ammonium H sulfate-treated rock phosphate)				
IT	<b>Surface-active substances</b> (in fertilizer granulation)				
AB	Ground rock phosphate (25 g.) is passed through a 100-mesh sieve and mixed with a saturated aqueous solution of NH <sub>4</sub> HSO <sub>4</sub> and let stand for 40 hrs. The sticky product is extracted 3 times with 1 l. of boiling H <sub>2</sub> O. NH <sub>4</sub> OH is added to the clear extract to pH 4. After some concentration, the liquid is filtered hot and				

Qazi 09/532,687

finally evaporated to dryness to obtain 33 g. of a mixture of (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> and monoammonium phosphate to be used as fertilizer.

=> FIL STNGUIDE

FILE 'STNGUIDE' ENTERED AT 12:33:26 ON 18 DEC 2003  
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT  
COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE  
AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.  
LAST RELOADED: Dec 12, 2003 (20031212/UP).

=> dup rem l91 l105

*remove duplicates (Agricola, Cropu)  
(not HCAPLUS)*

FILE 'AGRICOLA' ENTERED AT 12:33:47 ON 18 DEC 2003

FILE 'CROPU' ENTERED AT 12:33:47 ON 18 DEC 2003

COPYRIGHT (C) 2003 THOMSON DERWENT  
PROCESSING COMPLETED FOR L91  
PROCESSING COMPLETED FOR L105  
L108 14 DUP REM L91 L105 (0 DUPLICATES REMOVED)  
ANSWERS '1-11' FROM FILE AGRICOLA  
ANSWERS '12-14' FROM FILE CROPU

*no duplicates in  
Agricola - Cropu  
sets*

=> FIL AGRICOLA

FILE 'AGRICOLA' ENTERED AT 12:34:16 ON 18 DEC 2003

FILE COVERS 1970 TO 15 Dec 2003 (20031215/ED)

Compiled and distributed by the National Agricultural Library  
of the Department of Agriculture of the United States of  
America. It contains copyrighted material. All rights  
reserved. (2003)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> d l108 1-11 bib ab

YOU HAVE REQUESTED DATA FROM FILE 'AGRICOLA, CROPU' - CONTINUE? (Y)/N:y

L108 ANSWER 1 OF 14 AGRICOLA Compiled and distributed by the National  
Agricultural Library of the Department of Agriculture of the United States  
of America. It contains copyrighted materials. All rights reserved.  
(2003) on STN

AN 2001:19891 AGRICOLA

DN IND22295949

TI Response of sorghum (*Sorghum bicolor*) to atrazine, ammonium  
**sulfate**, and glyphosate.

AU Bradley, P.R.; Johnson, W.G.; Smeda, R.J.

AV DNAL (SB610.W39)

SO Weed technology : a journal of the Weed Science Society of America,  
Jan/Mar 2000. Vol. 14, No. 1. p. 15-18

Publisher: Lawrence, Kans. : The Weed Science Society of America.  
CODEN: WETEE9; ISSN: 0890-037X

NTE Includes references  
CY Kansas; United States  
DT Article  
FS U.S. Imprints not USDA, Experiment or Extension  
LA English

L108 ANSWER 2 OF 14 AGRICOLA Compiled and distributed by the National  
Agricultural Library of the Department of Agriculture of the United States  
of America. It contains copyrighted materials. All rights reserved.  
(2003) on STN

AN 2000:8880 AGRICOLA  
DN IND22019015

TI The influence of surfactant and nitrogen on foliar absorption of MON  
37500.

AU Miller, P.A.; Westra, P.; Nissen, S.J.

CS Colorado State University, Ft. Collins.

SO Weed science, May/June 1999. Vol. 47, No. 3. p. 270-274

Publisher: Lawrence, KS : Weed Science Society of America.  
CODEN: WEESA6; ISSN: 0043-1745

NTE Includes references  
CY Kansas; United States  
DT Article  
FS U.S. Imprints not USDA, Experiment or Extension  
LA English

AB Laboratory experiments were conducted to assess the influence of  
surfactants applied with or without nitrogen on MON 37500 foliar  
absorption by *Bromus tectorum*, *Bromus japonicus*, *Aegilops cylindrica*,  
*Triticum aestivum*, *Chorispora tenella*, and *Lactuca serriola*. MON 37500  
absorption in *B. tectorum* and *B. japonicus* increased from 40% 24 h after  
treatment (HAT) to 48% 48 HAT, averaged across surfactants with no added  
nitrogen. Averaged across nitrogen source and species, nonionic  
surfactant, ethylated seed oil, and organosilicate provided comparable  
enhancement of MON 37500 absorption (56 to 68%), whereas crop oil  
concentrate provided only 27 to 29% absorption under the same conditions.  
Averaged across species and surfactant class, urea ammonium nitrate had  
the greatest effect on MON 37500 absorption (68%), compared to ammonium  
**sulfate** (59%) or no nitrogen (40%). Nitrogen, regardless of the  
type, significantly improved foliar absorption of MON 37500. MON 37500  
absorption by species was 71, 63, 57, 57, 49, and 38% in *C. tenella*, *B.*  
*japonicus*, *T. aestivum*, *A. cylindrica*, *B. tectorum*, and *L. serriola*,  
respectively, when averaged across surfactants and nitrogen. Densely  
pubescent *B. japonicus* leaves did not retain significant amounts of MON  
37500 following a primary leaf wash.

L108 ANSWER 3 OF 14 AGRICOLA Compiled and distributed by the National  
Agricultural Library of the Department of Agriculture of the United States  
of America. It contains copyrighted materials. All rights reserved.  
(2003) on STN

AN 97:34485 AGRICOLA  
DN IND20565418

TI Dicamba antagonizes grass weed control with imazethapyr by reducing foliar  
absorption.

AU Hart, S.E.; Wax, L.M.

CS USDA, ARS, Urbana, IL.

AV DNAL (SB610.W39)

SO Weed technology : a journal of the Weed Science Society of America,

Oct/Dec 1996. Vol. 10, No. 4. p. 828-834  
Publisher: Champaign, Ill. : The Weed Science Society of America.  
CODEN: WETEE9; ISSN: 0890-037X

NTE Includes references  
CY Illinois; United States  
DT Article  
FS U.S. Imprints not USDA, Experiment or Extension  
LA English

L108 ANSWER 4 OF 14 AGRICOLA Compiled and distributed by the National  
Agricultural Library of the Department of Agriculture of the United States  
of America. It contains copyrighted materials. All rights reserved.  
(2003) on STN

AN 97:50890 AGRICOLA  
DN IND20580070  
TI Optimal glyphosate application time for control of foxtail barley (*Hordeum  
jubatum*).  
AU Conn, J.S.; Deck, R.E.  
AV DNAL (SB610.W39)  
SO Weed technology : a journal of the Weed Science Society of America,  
Apr/June 1995. Vol. 9, No. 2. p. 267-269  
Publisher: Lawrence, Kans. : The Weed Science Society of America.  
CODEN: WETEE9; ISSN: 0890-037X  
NTE Includes references  
CY Kansas; United States  
DT Article  
FS U.S. Imprints not USDA, Experiment or Extension  
LA English

L108 ANSWER 5 OF 14 AGRICOLA Compiled and distributed by the National  
Agricultural Library of the Department of Agriculture of the United States  
of America. It contains copyrighted materials. All rights reserved.  
(2003) on STN

AN 96:21629 AGRICOLA  
DN IND20505595  
TI Effect of sodium bicarbonate on clethodim or quizalofop efficacy and the  
role of ultraviolet light.  
AU McMullan, P.M.  
CS Agric. Canada Res. Ctr., Brandon, Canada.  
AV DNAL (SB610.W39)  
SO Weed technology : a journal of the Weed Science Society of America,  
July/Sept 1994. Vol. 8, No. 3. p. 572-575  
Publisher: Champaign, Ill. : The Weed Science Society of America.  
CODEN: WETEE9; ISSN: 0890-037X  
NTE Includes references  
CY Illinois; United States  
DT Article  
FS U.S. Imprints not USDA, Experiment or Extension  
LA English

L108 ANSWER 6 OF 14 AGRICOLA Compiled and distributed by the National  
Agricultural Library of the Department of Agriculture of the United States  
of America. It contains copyrighted materials. All rights reserved.  
(2003) on STN

AN 94:25389 AGRICOLA  
DN IND20381522  
TI Effect of ammonium **sulfate** on absorption of imazethapyr by  
quackgrass (*Elytrigia repens*) and maize (*Zea mays*) cell suspension

cultures.

- AU Gronwald, J.W.; Jourdan, S.W.; Wyse, D.L.; Somers, D.A.; Magnusson, M.U.  
 AV DNAL (79.8 W41)  
 SO Weed science, July/Sept 1993. Vol. 41, No. 3. p. 325-334  
 Publisher: Champaign, Ill. : Weed Science Society of America.  
 CODEN: WEESA6; ISSN: 0043-1745  
 NTE Includes references  
 CY Illinois; United States  
 DT Article  
 FS U.S. Imprints not USDA, Experiment or Extension  
 LA English  
 AB Field trials indicated that addition of ammonium **sulfate** to imazethapyr plus nonionic surfactant increased quackgrass control, especially at low imazethapyr rates. In greenhouse experiments, approximately twice as much imazethapyr was absorbed by quackgrass leaves when the **herbicide** was applied in combination with nonionic surfactant plus ammonium **sulfate** than when the **herbicide** was applied with nonionic surfactant alone. Black Mexican Sweet maize (BMS) suspension-cultured cells were used to evaluate the effects of ammonium **sulfate** and nonionic surfactant on cellular absorption of imazethapyr in the absence of a cuticular barrier. Imazethapyr absorption by BMS cells was diffusion-mediated, energy-dependent, and exhibited a pH optimum of approximately 3. Over the concentration range of 0.1 to 10.0 micromolars, the equilibrium concentration of imazethapyr in BMS cells was a linear function of the external concentration. Addition of ammonium **sulfate** to the external medium of BMS cells enhanced both the rate of imazethapyr uptake and medium acidification. There was a linear correlation between the ability of ammonium **sulfate** (0.5 to 10 mM) to promote medium acidification and imazethapyr uptake by BMS cells. The ammonium **sulfate**-induced stimulation of imazethapyr absorption in BMS cells was sensitive to plasma membrane adenosine triphosphatase inhibitors (sodium vanadate, diethylstilbestrol), the uncoupler carbonyl cyanide m-chlorophenylhydrazone, and energy metabolism inhibitors (sodium azide, nitrogen gas), demonstrating that this effect was dependent on ATP production and the functioning of the plasma membrane ATPase. It is hypothesized that cytoplasmic acidification in BMS cells due to ammonium assimilation stimulates the plasma membrane ATPase to pump protons across the plasma membrane which in turn acidifies the cell wall promoting cellular accumulation of imazethapyr by ion-trapping. Cell wall acidification due to ammonium assimilation may contribute to the ability of ammonium **sulfate** to enhance the efficacy of imazethapyr and other foliar-applied **herbicides**.

- L108 ANSWER 7 OF 14 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN  
 AN 92:74981 AGRICOLA  
 DN IND92043157  
 TI Quizalofop and sethoxydim activity as affected by adjuvants and ammonium fertilizers.  
 AU Beckett, T.H.; Stoller, E.W.; Bode, L.E.  
 CS ICI Americas, Inc., Wilmington, DE  
 AV DNAL (79.8 W41)  
 SO Weed science, Jan/Mar 1992. Vol. 40, No. 1. p. 12-19  
 Publisher: Champaign, Ill. : Weed Science Society of America.  
 CODEN: WEESA6; ISSN: 0043-1745

NTE Includes references.

DT Article

FS U.S. Imprints not USDA, Experiment or Extension

LA English

AB Ammonium fertilizers, petroleum oil concentrate, and nonionic surfactant were evaluated as postemergence spray additives to improve giant foxtail and volunteer corn control by 28 g ai ha<sup>-1</sup> of the ethyl ester of quizalofop or 56 g ha<sup>-1</sup> sethoxydim. Additions of 0.25% by vol nonionic surfactant or 2.5% petroleum oil concentrate improved grass control, but additions of 10% urea ammonium nitrate (28-0-0), 10% ammonium polyphosphate (10-34-0), or 0.1M ammonium **sulfate** (21-0-0-24S) did not consistently affect grass control. In laboratory studies with corn, greatest <sup>14</sup>C absorption from leaf-applied <sup>14</sup>C-quizalofop (8 h after treatment) was found with additions of petroleum oil concentrate (80% absorbed) or nonionic surfactant (18% absorbed), while less absorption was observed with treatments containing either no additive, urea ammonium nitrate, ammonium polyphosphate, or ammonium **sulfate** (8 to 13% absorbed). Surface tension and droplet size of spray solutions were affected primarily by additions of nonionic surfactant, petroleum oil concentrate, and the formulated **herbicides**. Solution density, solute potential, pH, and buffering capacity were primarily affected by fertilizer additions.

L108 ANSWER 8 OF 14 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN

AN 91:71970 AGRICOLA

DN IND91038252

TI Chemical vine desiccation of two potato cultivars.

AU Renner, K.A.

CS Michigan State University, East Lansing, MI

AV DNAL (75.8 P842)

SO American potato journal, July 1991. Vol. 68, No. 7. p. 479-491

Publisher: Orono, Me. : Potato Association of America.

CODEN: APOJAY; ISSN: 0003-0589

NTE Includes references.

DT Article

FS U.S. Imprints not USDA, Experiment or Extension

LA English

L108 ANSWER 9 OF 14 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN

AN 92:106010 AGRICOLA

DN IND92064232

TI Effects of glyphosate and surfactant concentrations on giant burreed (Sparganium eurycarpum) control with a ropewick applicator.

AU Leif, J.W. III; Oelke, E.A.

CS Univ. Minn., St. Paul, MN

AV DNAL (SB610.W39)

SO Weed technology : a journal of the Weed Science Society of America, July/Sept 1990. Vol. 4, No. 3. p. 625-630

Publisher: Champaign, Ill. : The Society.

CODEN: WETEE9; ISSN: 0890-037X

NTE Includes references.

DT Article

Qazi 09/532,687

FS U.S. Imprints not USDA, Experiment or Extension  
LA English

L108 ANSWER 10 OF 14 AGRICOLA Compiled and distributed by the National  
Agricultural Library of the Department of Agriculture of the United States  
of America. It contains copyrighted materials. All rights reserved.  
(2003) on STN

AN 89:34255 AGRICOLA

DN IND89011172

TI Control of quackgrass with glyphosate and additives.

AU Ivany, J.A.

AV DNAL (450 C16)

SO Canadian journal of plant science = Revue canadienne de phytotechnie, Oct  
1988. Vol. 68, No. 4. p. 1095-1101

Publisher: Ottawa : Agricultural Institute of Canada.

CODEN: CPLSAY; ISSN: 0008-4220

NTE Includes references.

DT Article

FS Non-U.S. Imprint other than FAO

LA English

SL French

L108 ANSWER 11 OF 14 AGRICOLA Compiled and distributed by the National  
Agricultural Library of the Department of Agriculture of the United States  
of America. It contains copyrighted materials. All rights reserved.  
(2003) on STN

AN 89:65706 AGRICOLA

DN IND89031737

TI Established foxtail barley, Hordeum jubatum, control with glyphosate plus  
ammonium **sulfate**.

AU Donald, W.W.

CS USDA, Metab. Radiat. Res. Lab., Fargo, ND

AV DNAL (SB610.W39)

SO Weed technology : a journal of the Weed Science Society of America, July  
1988. Vol. 2, No. 3. p. 364-368 ill

Publisher: Champaign, Ill. : The Society.

CODEN: WETEE9; ISSN: 0890-037X

NTE Includes references.

DT Article

FS U.S. Imprints not USDA, Experiment or Extension

LA English

=> d l108 bib ab 12-14

YOU HAVE REQUESTED DATA FROM FILE 'AGRICOLA, CROPU' - CONTINUE? (Y)/N:y

L108 ANSWER 12 OF 14 CROPU COPYRIGHT 2003 THOMSON DERWENT on STN

AN 2001-89493 CROPU H G

TI Bryum argenteum (silvery thread **moss**) management on creeping  
bentgrass **putting greens**.

AU Burnell K D; Yelverton F H; Gannon T W; Hinton J D

CS Univ.North-Carolina-State

LO Raleigh, NC, USA

SO Proc.South.Weed Sci.Soc. (53, 50-51, 2000)

CODEN: SWSPEB

DT Conference

LA English

FA AB; LA; CT

AB Treatments compared for *Bryum argenteum* control in 3 North Carolina creeping bentgrass **golf** course **greens** (cv. Penncross) in trial 1 were: 40-0-0-18% **Fe** (Izonizer), 1-0-0-4.5% **Fe** (Ironite), Tee Time + Peter's 20-20-20 and Ultra Dawn dishwashing soap, all applied alone or + oxadiazon for the first treatment, also **ferrous sulfate**; all were repeated at 4 wks after the 1st treatment (WAIT), except for Ultra Dawn, which was applied weekly 3 times, then stopped due to turf injury. Best control was with granular **iron** and liquid **iron sulfate** + ammonium **sulfate**. Treatments in trial 2 were: chlorothalonil Zn and Weather Stik (chlorothalonil), all applied with 0.25% Kinetic, at 218 or 436 gal/A, repeated at 2 WAIT; all gave over 90% **moss** control by 6 WAT and about 50% by 10 WAIT, with no significant differences between treatments, and no turf injury. (conference abstract).

L108 ANSWER 13 OF 14 CROPU COPYRIGHT 2003 THOMSON DERWENT on STN

AN 1999-84888 CROPU H P G

TI Management of silvery thread **moss** (*Bryum argenteum*) in bentgrass **greens**.

AU Yelverton F H; Isgrigg J III; Hinton J

CS Univ.North-Carolina-State

LO Raleigh, N.C., USA

SO Proc.Northeast.Weed Sci.Soc. (53 Meet., 104, 1999)

CODEN: PNWSBF

AV Crop Science Department, North Carolina State University, Raleigh, NC 27695-7620, U.S.A.

DT Conference

LA English

FA LA; CT

AB Treatments evaluated for control of *Bryum argenteum* in creeping bentgrass **golf** courses included: **iron** formulations (0-0-0-30% **Fe**, 4-0-0-18% **Fe**, 0-0-0-40% **Fe**, 6-0-0-11% **Fe**), Ultra Dawn dishwashing soap 3.2%, PMAS 30 ml/100 sq.m or ammonium **sulfate** 1 kg/100 sq.m applied alone or with oxadiazon 1.7 kg a.i./ha. PMAS (3 times at 1 wk intervals) gave 91% control after 3 wk and 53% at 8 wk; similar applications of Ultra Dawn gave 45 and 26% control, resp. Two applications of 4-0-0-18% **Fe** (4 wk interval) gave 78 and 85% suppression at 2 locations after 3 wk, and 26 and 94% control after 8 wk. Oxadiazon enhanced **moss** control by the **iron** formulations to more than 74 and 55% at 2 locations after 8 wk; 2 applications of 4-0-0-18% **Fe** gave 88% control. Enhanced control was partly due to nitrogen stimulation of bentgrass growth. (conference abstract) (No EX).

L108 ANSWER 14 OF 14 CROPU COPYRIGHT 2003 THOMSON DERWENT on STN

AN 1992-82155 CROPU H G

TI 2,4-D Amine Antagonism by Salts.

AU Nalewaja J D; Woznica Z; Matysiak R

LO Fargo, N.Dak., USA

SO Weed Technol. (5, No. 4, 873-80, 1991) 6 Tab. 12 Ref.

CODEN: WETEE9

AV Crop and Weed Science Department, North Dakota State University, Fargo, ND 58105, U.S.A.



Qazi 09/532,687

DT Journal

LA English

FA AB; LA; CT

AB Effects of inorganic salts on 2,4-D diethanolamine control of Kochia scoparia were studied, on plants sprayed with 210 g/ha 2,4-D in distilled water or water containing 22 salts, all at 500 ml/l cation (w/v). Calcium, magnesium, sodium, potassium and **iron** salts (except calcium and sodium **sulfates** and phosphates) antagonized 2,4-D amine, with additive effects in mixtures. 2,4-D was more effective with acids than with their ammonium salts, in distilled water or sodium bicarbonate or **ferric sulfate** solutions, but low pH did not always increase efficacy. Diammonium (ammonium) **sulfate**, ammonium peroxydisulfate, sodium bisulfate, nonionic **surfactant** (X-77), mineral oil (Mor-Act) and methylated sunflowerseed oil (Sun-it) adjuvants all overcame 2,4-D antagonism in some natural well waters with high salt levels.